

**INTERNATIONAL BLACKSEA
MARITIME SECURITY SYMPOSIUM
2019**

“Maritime Security in the Black Sea”

27-28 June 2019

SYMPOSIUM PROCEEDINGS



**Maritime Security Centre of Excellence
(MARSEC COE)**



Editorial

Director

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Layout Production

Abdullah Teber
Ensign

English Proofreader

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Published by
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Table of Contents

Foreword	6
Introduction	8
Executive Summary	11
SYMPOSIUM PAPERS	14
The Black Sea from Historical Perspective.....	15
Serkan Keçeci, Ph.D.	
International Black Sea Maritime Festival.....	26
Radm. (R) Cem Gürdeniz	
Russian Rhetoric Undermines Free Access to the Black Sea.....	29
Cdr.Marten Meijer, Ph.D.	
The Montreux Convention: The Stonewall of Security in the Black Sea.....	35
Igor Delanoë, Ph.D.	
Montreux Convention and Sea of Peace: “The Black Sea” (Turkish Perspective).....	41
Prof.Dr.Mitat Çelikpala	
Overview of the Black Sea Economy	42
Mr.Hıdır İlyas Karabıyık	
The Black Sea Energy Routes and Their Effects over Maritime Transport.....	44
Assoc.Prof.Burak Şakir Şeker	
Operational Forecasting Hydrodynamic Processes and Pollutant Transport in the Easternmost Part of the Black Sea	51
Prof.Dr.Demuri I.Demetrashvili	
Chemical and Biological Pollution of the Black Sea	64
Prof.Dr.Gülşen Altuğ	
Oceanography of the Black Sea	65
Prof.Dr.Şükrü Turan Beşiktepe	
Black Sea Commission: Fighting against Maritime Pollution in the Black Sea.....	75
Ms.Iryna Makarenko	
SAR Operations – Bulgarian Experience.....	79
Mr.Georgi Tsonev	
Organization of the SAR and Oil Spill Response in the Russian Federation.....	80
Mr.Victor Chernov	
Marine Traffic and Accident Analyses in the Black Sea	81
Assoc.Prof.Sercan Erol	
The Black Sea Region Energy Security: Risks and Opportunities.....	86
Azime Telli, Ph.D.	
Maritime Tourism in the Black Sea Region, Yachting and Marinas	87
Mr.Cahit İşcen	
SPEECHES	95
Welcome Speech	96
Opening Remarks	98
Closing Remarks	101
Pictorial	104
Moderators’ & Speakers’ Profiles.....	109
About MARSEC COE	126
Symposium Programme	129



FOREWORD

FOREWORD

Throughout the history, Black Sea have been a region of strategic importance, surrounded by different security blocks, a bridge between the west and east, an area of conflicts, and a cooperation area between the coastal countries.

The 1st International Black Sea Maritime Security Symposium hosted by MARSEC COE took place in Istanbul within the framework of the political, cultural, environmental and human security aspects of the events taking place within this geography.

This book has been prepared for the purpose of giving an impression of the content of the symposium to the personnel who do not have the opportunity to attend the symposium or who will attend and make presentations.

First of all, I would like to extend my sincere gratitudes to all the participants who contributed to the planning of the symposium, who made presentations at the symposium, participated in the panels as moderators and to all those actively participated in the symposium with their questions and comments.

Sümer KAYSER
Capt. (TUR-N)
MARSEC COE Director



INTRODUCTION

INTRODUCTION

Maritime security is indivisible and interdependent. Currently, no state is immune from the effects of a maritime related incident. However, the geographical and legal status have shaped and simplified acquiring the maritime security of the Black Sea.

Despite the fact that roughly 50.000 ships have been navigating through Turkish Straits either to or from the Black Sea, quarter of which have been oil tankers, and they have carried almost half a billion tons of goods, and there have been no major incident in the Black Sea.

These contradictions precise that the Montreux Convention is not just an international treaty that governs the passage of ships through the Turkish Straits, it also carries much more legal significance for the security of the Black Sea maritime domain and therefore the importance of the Montreux regime can neither be overstated nor ignored. Possessing Turkish Straits and the longest coastline in the Black Sea, Turkey has always promoted peace and stability in this important area.

At this point, MARSEC COE has always been a centre for strategic studies as well as a multinational hub for practical training in the field of Maritime Security. Therefore, MARSEC COE is committed to the maritime security related issues of the international community.

Building upon our already extensive involvement of these activities and our ambition, it was decided to carry this regional endeavor to the next level. We organized our first International Maritime Security Symposium which is “International Black Sea Maritime Security Symposium-2019”.

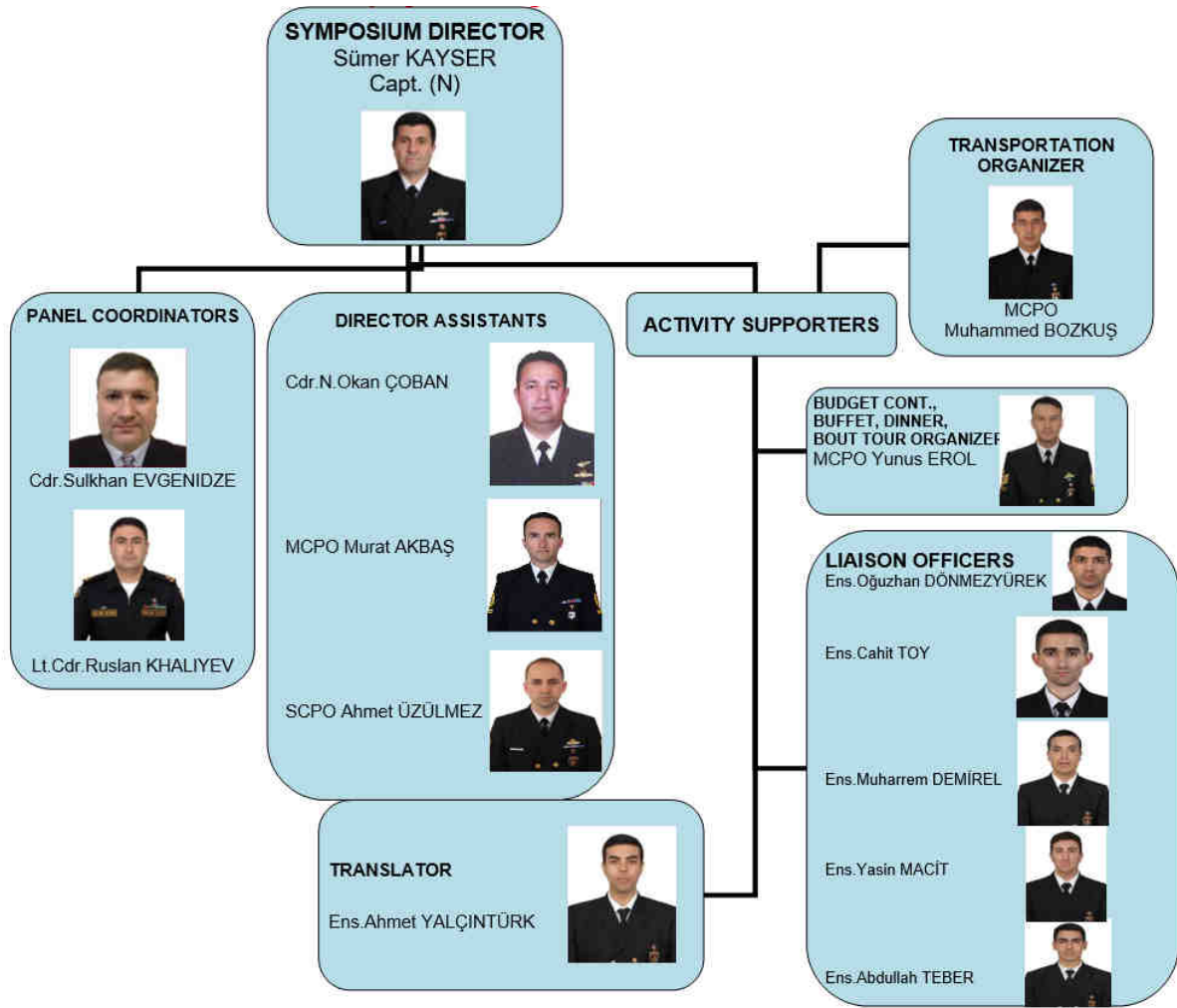
This annual Symposium provided not only the intellectual power and context for future maritime security events, but also brought together key individuals, leaders and decision makers from international, regional and national maritime security organizations, government/military officials, representatives from shipping and industry.

International Black Sea Maritime Security Symposium-2019 was held under the theme **“Maritime Security and Cooperation in The Black Sea”**.

Panel Topics

- ▶ The Black Sea from Historical Perspective
- ▶ International Black Sea Maritime Festival
- ▶ Montreux Convention and Sea of Peace: “The Black Sea”
- ▶ Overview of the Black Sea Economy
- ▶ The Black Sea Energy Routes and Their Effects over Maritime Transport
- ▶ Climate Change and Maritime Trade Relationship: It’s Effect over The Black Sea
- ▶ Oceanography of the Black Sea
- ▶ Fighting against Maritime Pollution in the Black Sea
- ▶ Disaster Relief and Maritime Assistance in the Black Sea
- ▶ Analysis of Maritime Accidents in the Black Sea and Search & Rescue
- ▶ Black Sea Energy Security
- ▶ Maritime Tourism in the Black Sea, Yachting and Marinas

Symposium Organization Committee





EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

International Black Sea Maritime Security Symposium-2019 hosted by MARSEC COE, took place at the Naval Museum Command/Beşiktaş-Istanbul on 27-28 June 2019 with the theme “Maritime Security in the Black Sea”, which aimed to bring different stakeholders from academicians to military together and to cover general maritime issues free from regional disputes.

The Symposium was attended by 55 participants¹ with the representatives from 7 Nations (Bulgaria, Georgia, Germany, Russian Federation, Spain, Turkey and Ukraine), 2 NATO Command Structure (JFC NAPLES, MARCOM) and 2 COE².

The Symposium was specifically important for MARSEC COE since this it was the first of a series of conferences MARSEC COE were planning to organize in cooperation with academia, international organizations and the countries.

Some key points of the symposium are:


- The current security and stability situation in the Black Sea, with its multinational and cross-functional nature, requires all littoral states to take advantage of all current instruments at hand, thereby attributing exclusive importance in strengthening the trust and stability among Black Sea littoral states.

- The Black Sea has a critical geopolitical and geostrategical location which enables access to the Balkans, Caspian, Caucasus, Middle East and Mediterranean; is also an important energy corridor (TANAP, Turkish Stream, etc.) in which oil and natural gas of the Russian Federation, Caucasus and Caspian region are transferred to world markets; is a potential energy source with its hydrocarbon deposits as well.

- In the Black Sea, that is open to reflections of global scale geopolitical competition, Turkey, with the coastal countries in the region, aims to create regional identity and collaboration environments; thus, aims to minimize the possibility of external interference that may impair stability, and also to exclude the Black Sea from geopolitical competition. Therefore:

¹ 4-Moderators, 15-Speakers (Panelists), 36-Audience.

² COE CSW: Centre of Excellence for Operations In Confined and Shallow Waters.
CJOS COE: Combined Joint Operations from the Sea Centre of Excellence



▪ Montreux Convention and the present regime in the Black Sea have special importance for the stability of the littoral states, and Montreux Convention proved itself as a powerful treaty.

▪ Montreux Convention, in many respects, lies at the heart of the security equation in the Black Sea naval stage.

▪ The Montreux Convention does prevent escalation of maritime incidents into international conflicts.

▪ The Montreux Convention since then has been an essential element of the Black Sea security and a source of stability for Turkey in peacetime and wartime for decades.

• The growth in the commercial importance of the Black Sea also has increased the pollution of the sea. Therefore:

▪ The coastal and shelf zones of the seas and oceans are undergoing most great human pressure which creates a serious danger to the ecosystem of these areas.

▪ The Black Sea Commission's activities and exercise program is an integral part of the regional preparedness framework and enables countries around the Black Sea to co-operate and coordinate efforts in case of major oil pollution incidents.

• Turkey stands out as the most active and constructive actor in the Black Sea region, both in terms of ensuring regional security and enhancing co-operation among littorals. Considering the disagreements, divergences and critical events experienced recently in the Black Sea, the leading and unifying role of Turkey in the Black Sea geography was confirmed and, once again it has been emerged that Turkey acts as "a regional bridge" that can gather littoral states and is the most active actor of the region.

• The symposium was a unique opportunity to gather all littorals in the same forum in spite of the disagreements and disputes among them, which is valuable to keep the dialogue channels open in accordance with the "dual track approach".

• It has been observed that the Symposium contributed to increase the international visibility of MARSEC COE within the process of NATO accreditation, ensuring both the regional security of the region and the development of cooperation between littorals, and sharing Turkey's strategy and vision with the participants within the scope of Turkey's "Regional Ownership" principle.

The Black Sea from Historical Perspective

Serkan Keçeci, Ph.D.

International Black Sea Maritime Festival

Radm. (R) Cem Gürdeniz

NATO Strategic Communication on the Access to the Black Sea

Cdr.Marten Meijer, Ph.D.

The Montreux Convention: the Stonewall of Security in the Black Sea

Igor Delanoë, Ph.D.

Montreux Convention and Sea of Peace: “The Black Sea”

(Turkish Perspective)

Prof. Dr. Mitat Çelikpala

Overview of the Black Sea Economy

Mr.Hıdır İlyas Karabıyık

The Black Sea Energy Routes and Their Effects over Maritime Transport

Assoc.Prof.Burak Şakir Şeker

Operational Forecasting Hydrodynamic Processes and Pollutant Transport in the Easternmost Part of the Black Sea

Prof.Dr.Demuri I. Demetrashvili

Chemical and Biological Pollution of the Black Sea

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Oceanography of the Black Sea

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Black Sea Commission: Fighting against Maritime Pollution in the Black Sea

Ms.Iryna Makarenko

SAR Operations – Bulgarian Experience

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Organization of the SAR and Oil Spill Response in the Russian Federation

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Marine Traffic and Accident Analyses in Black Sea

Assoc.Prof.Sercan Erol

The Black Sea Region Energy Security: Risks and Opportunities

Azime Telli, Ph.D.

Maritime Tourism in the Black Sea Region, Yachting and Marinas

Mr.Cahit İçcen

THE BLACK SEA FROM HISTORICAL PERSPECTIVE¹

by Serkan Keçeci, Ph.D.

Historically, a number of imperial powers, such as the Byzantines, the Ottomans and the Russian empire at various times saw the Black Sea at the very centre of their strategic aims and interests, but there has not been sufficient research on the role of this sea in the history of these empires.² The Black Sea stretches from the port of Burgas in the west across to the port of Batum in the east, a distance of 1,174 km; from the cape of Crimea in the north to the port of İnebolu in the south is only 260 km. The western edge is located at Istanbul Strait, where the Black Sea connects to the Aegean and Mediterranean seas while the eastern tip lies on the Rioni River, fed by snow water from the Caucasus Mountains. The Black Sea is fed by significant rivers from the western and eastern sides, respectively the Danube and the Rioni, both of which cause currents that run counter-clockwise at their mouths. In the northeast, the Don River empties into the Sea of Azov and, through the Kerch Strait, into the Black Sea. In the southwest another strait, Istanbul Strait, allows a top current to carry the cooler Black Sea water out into the Sea of Marmara and then into the Mediterranean through Çanakkale Strait. The water level of the Black Sea is higher than that of Istanbul Strait and the Sea of Marmara, and the difference in altitude between the northern and southern sides of Istanbul Strait is almost 40 cm and this gives rise to strong surface currents from north to south. All of these waterways serve as a way of communication with different regions and states beyond the region. If the Danube was followed upstream, the centre of Europe would be reached easily, passing the Hungarian plain and the Alps; if the Rioni was tracked, its source located in the Caucasus would be discovered. The Crimea was a gate to the Eurasian steppe in the north, while the southern capes stuck out from the Anatolian uplands.

The region enclosing the Black Sea has been very mixed in terms of ethnicity, religion, culture and custom. Generally, the centre of the stage is the sea and its littoral extending from the Balkans to the Caucasus Mountains and from the *Dasht-i Qipchaq* to central Anatolia. In terms of history, parts or even all of the sea have sometimes been controlled by a major imperial power, but the coastline has most often been divided among many local rulers. In order to understand the strategic importance of the Black Sea in the history of empires, one must firstly focus on its connection points to other waterways such as rivers and seas, hence Istanbul could be the proper starting point for a clear analysis.

The geographical location of Istanbul, monitoring the crossing between east and west, and between north and south, between the Black Sea and the Mediterranean, and between Europe and Asia rendered it vital for an empire in terms of economic and strategic interests in both Europe and Asia. For this reason, the role of Istanbul, as a significant gateway into the Black Sea and Mediterranean regions, was a factor in the formulation of imperial ideology as well as imperial strategy.³ At times in the history of Byzantium almost all parts of the empire were overrun and only the besieged city of Constantinople survived. But with their capital city secure behind its great walls Byzantine rulers were able to regain their strength and re-conquer

¹Much of the information in this paper was extracted from the author's doctoral thesis: Serkan Keçeci, "The Grand Strategy of the Russian Empire in the Caucasus against Its Southern Rivals (1821-1833)" (Unpublished PhD Thesis, The London School of Economics and Political Science, 2016).

² On history of the Black Sea, see Charles King, *The Black Sea: A History* (Oxford: Oxford University Press, 2004); Neal Ascherson, *Black Sea: The Birthplace of Civilisation and Barbarism* (London: Random House, 2007); Charles King, "The Wider Black Sea Region in the Twenty-First Century," in *The Wider Black Sea Region in the 21st Century: Strategic, Economic and Energy Perspectives*, ed. Daniel Hamilton and Gerhard Mangott (Washington D.C.: Center for Transatlantic Relations, 2008), pp. 5-11.

³ For the defence system which was based around Istanbul at the beginning of the nineteenth century, see Rossiiskii Gosudarstvennyi Voenno-Istoricheskii Arkhiv, fond: 450, opis': 1, delo: 705, pp. 1-9ob [Hereafter RGVIA].

the lost provinces. For the Ottomans, the capture of Constantinople (Istanbul) meant a great rise in status, turning one of the many Turkic states into the heir of Rome. But not only Istanbul but all other ports and fortresses should be seen as complementary parts of the Ottoman defensive system in the Black Sea.

The capture of Istanbul in 1453 was followed within a few decades by Ottoman domination of the whole Black Sea coastline, though the Ottomans often preferred to rule through local clients rather than to resort to annexation. After the conquest of almost the entire Black Sea coast of Anatolia by the 1460s, the Ottomans shifted their sights across the water and took control of the major ports and fortresses around the Black Sea such as Kefe and Azak at the mouth of the Don River in 1475, and Anapa in 1479. The fortresses of Akkerman and Kilia (both important commercial centres) were seized in 1484 following the accession of Bayezid I. The Black Sea became “an Ottoman lake”, closed to merchants of other states who were prevented from entering Çanakkale and Istanbul Straits. The regional trade came under the control of the Ottomans.⁴ The Ottoman state was historically the first empire which had been able to control the entire Black Sea littoral, hence Istanbul became a trade hub where merchandise passed through and could be taxed or used to feed the gradually increasing population of the Ottoman capital. For three centuries the Ottomans controlled the Black Sea, from the conquests of the late fifteenth century until the opening of the sea to European navies and merchants in the late eighteenth century. To consolidate its naval superiority in the Black Sea, Bayezid both increased the size of the fleet and engaged experienced corsairs as naval captains in 1498. Piracy was, in the succeeding centuries, to act as the most important school of seamanship and naval warfare for Ottoman mariners, and the corsairs were to provide the most successful Ottoman admirals. It was Bayezid who established the close link between piracy and the Imperial Ottoman fleet.⁵

Ensuring control of Istanbul and Çanakkale Straits was one of the keys to the seizure of Istanbul. It was an unchanging component in the security of the new Ottoman capital after the conquest. For these reasons, the Black Sea held a vital position in the Ottoman imagination and in Ottoman grand strategy. It was accepted as a distinct region of the Ottoman sultan’s domain, bounded on the south by the Anatolian heartland and on the north by the *Dasht-i Qipchak*, which served as a buffer between the sea and the gradually emerging threats to the north. The Ottomans well understood the relationships between geography, security, commerce, and state-building, far better indeed than the empires that preceded it in the region.⁶ In this context, the northern coastal line of the Black Sea, from Istanbul Strait around to the Crimean ports and the straits of Kerch became sub-provinces, governed by appointed administrators from the imperial centre. The southern coastline was likewise divided into provincial administrations. The Caucasus coast, although never a directly administered district, was dominated by garrisons inside fortified ports.

The geography of the Black Sea basin gave the Russians more strategic choices and opportunities compared to the Ottomans. The great rivers flowing into the sea from the north facilitated the swift passage of large armies or commodities over large distances. The movement of goods on the waterways and connecting portages during the navigable season was by far the most efficient form of transport. In this context, it would have been useful to build canals to replace portages in order to avoid the delays of repeated trans-shipment but the marshy terrain

⁴ To some scholars, the gradual closing of the Black Sea to direct foreign commerce by the Ottomans after the capture of Istanbul in 1453 was a disaster of the first order for subject peoples and Ottoman Muslims alike. Carl M. Kortepeter, “Ottoman Imperial Policy and the Economy of the Black Sea Region in the Sixteenth Century”, *Journal of the American Oriental Society*, Vol. 86, No. 2 (1966), p. 86.

⁵ Colin Imber, *The Ottoman Empire, 1300-1650* (New York: Palgrave, 2002), p. 40.

⁶ Gábor Ágoston, “Where Environmental and Frontier Studies Meet: Rivers, Forests, Marshes and Forts along the Ottoman-Hapsburg Frontier in Hungary,” in *The Frontiers of the Ottoman World*, ed. A. C. S. Peacock (Oxford: Oxford University Press, 2009), pp. 57-79.

of the northern Black Sea made such projects difficult, especially at empire's periphery. Geography made it extremely probable that the state holding the river heads to the north would eventually be fighting to wrest the river mouths from those who held them.⁷ The Black Sea itself was vital for the shipping of supplies for any army operating in the region, and the strength, both natural and man-made, of fortresses played a significant role in blocking the transportation of troops and supplies.⁸

Ports and fortresses were crucial to the Ottoman system of rule. Fortresses might be in the hands of local warlords who submitted to the Ottomans when so commanded but who otherwise acted autonomously. In this context, a relatively low-cost strategy was employed by the Ottoman central government. Possession of the strategic fortresses and ports allowed control of the sea and gave the Ottomans the leverage to forge agreements with the most powerful political entities inland. These agreements provided for some degree of autonomy over local affairs in exchange for tribute and professed loyalty to the sultan. That strategy entailed a certain amount of risk, however. The points of direct Ottoman power – fortified garrisons on rivers and seaports – were targets of assault when the vassals decided to revolt, and patron-client relationships with powerful native rulers were stable only so long as the client did not receive a better offer from another potential patron and also so long as the patron was feared.

Fortresses were the most important element in the defence of the Black Sea coastal line.⁹ Terrain, climate and sparse populations limited the number of available routes along which armies could move. An invading army had to reduce any fortresses on its line of march or suffer attacks to its rear and the wrecking of its supply lines by the resident garrison. Furthermore, fortresses also could aid an offensive action, acting as supply depots and bases for reserve troops. The struggle for control of fortresses located on the northern coast of the Black Sea was the hallmark of the major Russian-Ottoman campaigns of the eighteenth century. From west to east, the rivers Danube, Dniester, Bug, Dnieper, Don and Kuban were vital natural communication and transportation lines for regional trade, control and security on the northern coastal line of the Black Sea. The key fortresses and military fortifications the Ottomans captured or built at the junction of the Black and Azov Seas, the steppe, and often of the rivers, along with their control over client states subject to their suzerainty allowed them to maintain a high degree of security in the immediate Black Sea region for many centuries. These fortresses were massive and vital strongholds guarding the Ottoman frontier against the incursions of hostile neighbours around the northern edge of the Black Sea and beyond. It was above all their strength that for many centuries preserved the Black Sea as an Ottoman lake.

From west to east the most important fortresses were İbrail, İsakçı, İzmail, Tulça, and Kilia in or near the Danube delta; Bender, on the Dniester and Akkerman on that river's mouth; Ochakov (Özü) on the Dnieper; Orkapı (Perekop) at the isthmus of the Crimean peninsula and Kefe on the south Crimean coast; Kerch at the mouth of the Sea of Azov, Yenikale on the eastern salient of the Crimean peninsula, and Taman across the straits through which the Sea of Azov debouches into the Black Sea; and finally Azov where the Don river debouches into the Sea of Azov. Furthermore, the north-eastern coast of the Black Sea was also secured by the Ottoman fortresses of Taman, Temrük, Kızıldağ, Adahun, Boğaz and Acu which were built around the Taman peninsula above all to secure it against any naval assaults. In the eighteenth century these fortresses formed the vital barrier against the growing southward expansion of the Russian empire.

⁷ William Henry Parker, *An Historical Geography of Russia* (London: University of London Press, 1968), p. 20.

⁸ John P. LeDonne, "Geopolitics, Logistics, and Grain: Russia's Ambitions in the Black Sea Basin, 1737–1834," *The International History Review* 28, no. 1 (2006): pp. 1-41.

⁹ RGVIA, fond: 450, opis': 1, delo: 454, pp. 1-30ob.

The chain of these fortresses enclosing the northern coast of the Black Sea, in combination with the control of the steppe provided by the Crimean Tatars, meant that for 300 years from the destruction of Byzantium until the second half of the eighteenth century there was little threat of any power on the Ottomans' northern borders – Habsburgs, Poles or Russians – mounting a serious challenge to Ottoman dominion over the Black Sea area. The advantages and hazards of empire by condominium were clear in the Ottomans' relations with two groups around the sea from the fifteenth century to the seventeenth centuries: the khans of Crimea and the kings of Georgia. In the first place, the Crimean Tatars were speakers of a Turkic language and, as Muslims, part of the same cultural universe as the Ottomans. The khan of Crimea controlled his own affairs and conducted a foreign policy that was at times wholly independent of that of the Ottoman court. Tatar raids on Polish, Russian, and even Wallachian and Moldovan cities and caravans provided a useful instrument for the Ottomans north of the sea, a way of fending off potential aggressors and of checking rebellious Christian clients. However, the independence of the Giray khans also meant that they could, at times, pursue policies that were contrary to the strategic interests of the Ottomans. Tatar incursions often threatened to provoke full-scale wars with Poland and Muscovy. In fact, from the last seventeenth century forward, Ottoman policy toward the Tatars more often involved attempts to control their reckless raiding than use them as a lever against northern powers. The problem was that the Girays' legitimacy and their state's political economy depended on slave trade and plunder.¹⁰ Nevertheless, although the Crimean khans could be an embarrassment to the Ottomans, their state played a crucial role in Ottoman grand strategy and domination of the Black Sea. The Ottomans and the khans depended on each other in order to survive.¹¹ Though the Crimean khans were entrusted with providing the land-based security of the Black Sea by the Ottomans, the bureaucratic structure and the military system of the khanate had not been designed to withstand the military and demographic advancement of Russia towards south in the eighteenth century.

The rich natural resources and commercial potential of the Black Sea region – both land and water – provided the Ottoman imperial centre with a hinterland that played a major role in the strength and prosperity of the entire empire and contributed to Ottoman ability to expand on other fronts. On the other hand, for the Russians control over the agricultural resources and the communications of this region north of the Black Sea was vital to the whole strategy of southward expansion. The Ottomans displayed an unbending determination to hold their Black Sea defence line and deny Russia access to the Sea. Following the Ottoman victory on the Prut against the Russians in 1711 which resulted in the regain of Azov, the Ottoman and Russian empires had three major wars during the eighteenth century – from 1735 to 1739, 1768 to 1774, and 1787 to 1792. Until 1768 the Ottoman line remained largely intact but the last two wars were devastating for the Ottomans, who were forced to sign the Treaties of Küçük Kaynarca and Yassı, in 1774 and 1792 respectively. The Ottomans lost the key strongholds of Kılburun, Yenikale, Kerch, Azov, Ochakov, Taman, Temrük, Kızıлтаş, Adahun, Boğaz and Acu to the Russians as a result of defeat in these two wars.

In this complex Ottoman defensive system, the vital geographical position of the fortress of Azov as the link between the western and eastern fortress systems increased its strategic and

¹⁰ C. Max Kortepeter, "Ottoman Imperial Policy and the Economy of the Black Sea Region in the Sixteenth Century," *Journal of the American Oriental Society* 86, no. 2 (1966): pp. 86-113; "Gāzi Girāy II, Khan of the Crimea, and Ottoman Policy in Eastern Europe and the Caucasus, 1588-94," *Slavonic and East European Review* 44, no. 102 (1966): pp. 139-66; Alan Fisher, "Muscovy and the Black Sea Slave Trade," *Canadian-American Slavic Studies* 4, no. 4 (1972): pp. 575-94; "Les rapports entre l'Empire ottoman et la Crimée: L'aspect financier," *Cahiers du Monde Russe et Soviétique* 13, no. 3 (1972): pp. 368-81; Mikhail Kizilov, "Slave Trade in the Early Modern Crimea from the Perspective of Christian, Muslim, and Jewish Sources," *Journal of Early Modern History* 11, no. 1-2 (2007): pp. 1-31.

¹¹ Alexandre Bennigsen et al., eds., *Le Khanat de Crimée dans les Archives du Musée du Palais de Topkapi* (Paris: Mouton, 1978). For a comprehensive review on this work, see Victor Ostapchuk, "Review: The Publication of Documents on the Crimean Khanate in the Topkapi Sarayi: New Sources for the History of the Black Sea Basin," *Harvard Ukrainian Studies* 6, no. 4 (1982): pp. 500-28.

military significance and it was subsequently turned into a strategic hub by the Russians.¹² In the north-eastern and eastern region of the Black Sea, from Azov to Tiflis and from Kerch to Kizliar, the Ottoman security line based on military and transportation routes connecting fortresses, fortifications, redoubts, castles and warehouses was hard to sustain because its security depended too much on the assistance of the local people. The Russians designed their key Azov-Mozdok military line to suit the specific needs of controlling and fighting in the Caucasian interior. This when completed ran from Azov in the west through Sv. Dmitriia (Rostov), to Stavropol', Aleksandrovsk and Mozdok fortress, which was strategically situated in the north-central Caucasus on the Terek river.¹³ The Azov-Mozdok military line included both major fortresses and smaller strongholds. Its purpose was to secure Russian territory and supply lines from raids by the local people and in some cases also against Ottoman attacks. But the forts also were bases from which further southward advances could be launched.

In Mozdok, the military line split into two parts, one of which carried on towards the east through the Naur and Gerki-Sunzhensk redoubts and finally reached the fortress of Kizliar, close to where the river Terek flowed into the Caspian Sea. The fortress of Kizliar strengthened Russia's ability to control and utilise the Caspian waterway.¹⁴ The second line went towards the south, passing through Ossetia and the Caucasus mountain range as far as the fortress of Tiflis. This military line contained a number of fortresses, smaller strongholds and fortified supply centres, and protected the main route through the Caucasus Mountains to Georgia along the Georgian Military Highway. This line of strongholds and fortresses was created as a part of a long-term grand strategy to allow Russian southward expansion by securing key communications and supply lines and facilitating the domination of the surrounding areas.

By holding the fortresses of Kerch and Yenikale, the Russians had secured communications and transportation between the Azov and Black seas. Nevertheless, they were not sufficiently strong either to consolidate their military power on the north-eastern coast of the Black Sea or to turn the region into an economic and logistical base for further expansion even by the end of the eighteenth century. The north-eastern waters of the Black Sea basin, some four hundred kilometres long, had the handicap of being shallow and poorly sheltered and the absence of roads also hindered the transport of goods to the seaboard. In the Kuban basin, navigation was risky and the basin did not possess convenient natural or port facilities.

The Russian ports further to the west on the Black Sea coast developed in order to import Mediterranean products in large amounts in exchange above all for the wheat of the newly cultivated steppes. In the decades following Catherine II's conquest of the region its population and economy grew enormously. By 1827 colonists had poured into the three coastal provinces of Ekaterinoslav, Kherson and Tauride whose male population was now almost 800,000. Less than 5% of Russia's foreign trade passed through the Black Sea ports in 1802 and nearly one quarter by 1816. By then almost 70% of Russian wheat exports went through her newly acquired or constructed Black Sea ports.¹⁵ Income from the market-oriented agriculture and other commercial activities was highly significant for the Russian treasury as well as for economic development in the region.

¹² On the importance of Azov, see Alan Fisher, "Azov in the Sixteenth and Seventeenth Centuries," *Jahrbücher für Geschichte Osteuropas* 21, no. 2 (1973): pp. 161-74.

¹³ While the fortress of Stavropol long remained except as a strategic position between the Don delta and Mozdok, Vladikavkaz had paramount strategic importance in the Terek basin. Having protected the entrance to the passes through which the Terek escapes, it had a key place in all the wars of the Caucasus since it controlled key land-based communication and transportation routes.

¹⁴ N. N. Garunova and Nikolai Dmitrievich Chekulaev-Bratchikov, *Rossiiskaia imperatorskaia armii na Kavkaze v XVIII veke: Istorii kizliarskogo garnizona (1735-1800 gg.)* (Makhachkala: Alef, 2011).

¹⁵ E. I. Druzhinina, *Severnoe prichernomorie 1775-1800 g.* (Moskva: Akademii Nauk, 1959), pp. 254-5, 58; *Iuzhnaia Ukraina 1800-1825 gg.* (Moskva: Akademii Nauk, 1970), pp. 335-38; *Iuzhnaia Ukraina v period krizisa feodalizma 1825-1860 gg.* (Moskva: Akademii Nauk, 1981), pp. 12-13.

The port of Taganrog located at the Don outlet became significant in the eighteenth century. But despite being linked by established waterways and portages with central Russia, it suffered from severe drawbacks: the Sea of Azov freezes from November to March, and there was never enough water through the Taman strait to allow deep-draft shipping.¹⁶ Odessa was founded in 1794 between the mouths of the Dniester and the Bug, and became one of the greatest ports of the Black Sea. It had a population of 30,000 in 1823 and almost 80,000 twenty years later. The site was an open, deep bay and was protected by breakwaters. Frost interrupted navigation only briefly and in some years not at all.¹⁷ Wheat was the main export. The huge growth in the population, economy and infrastructure of New Russia was the crucial and essential base for projecting Russian power westwards towards Istanbul and eastwards towards the Caucasus.

The port of Sevastopol, having a natural harbour and deep inlets sheltered by promontories, was backed by mountains. It was more suited to become a great naval base than to be a commercial port. It was closed to commerce in 1804 and the infrastructure to build and supply a formidable navy was created at remarkable speed. Henceforth Sevastopol was the headquarters of the Russian fleet, which dominated the Black Sea and protected maritime communications between the northern and eastern shores of the Black Sea. Naval supremacy on the Black Sea also allowed Russia to transport troops and military supplies in wartime, which could prove a crucial advantage for armies operating either in the Balkans or in Anatolia, since in both regions land communications were poor, supply trains were vulnerable to guerrilla raids, and it was seldom possible to live off the land.¹⁸

In the eighteenth and early-nineteenth centuries, Astrakhan was not only an important port on the coast of the Caspian Sea but also a key supply depot for armies crossing the Caucasus overland.¹⁹ Military equipment and necessities were transferred from Astrakhan to Kizliar and Mozdok, from where local wagons carried them across the mountains to Tiflis. Nevertheless, this route was not entirely secure against raids by the very mobile mountain people even in the nineteenth century after Russia's annexation of Georgia. From Tiflis, both civilian and military traffic had to cross the Surami Pass before reaching the city of Kutaisi. Oxen could not cope with the terrain and the weather, and horses had to be used. From Kutaisi to the Black Sea coast at Poti was a far easier journey: supplies could be rafted down the river Rioni to Poti. The fortress of Bagdadçık was situated at the gorges of the Khani, south-east of Kutaisi, in order to guard the strategic route from central Georgia to the Black Sea. Poti was the best port in the region and therefore a key strategic asset. Although lost to Russia in 1809, the Ottomans bargained hard to get it back from the Russians at the treaty of Bucharest in 1812. Only after a further defeat in the Russo-Ottoman war of 1828-29 were the Ottomans finally forced to concede Poti.²⁰ This was a major strategic gain for the Russians even though large ships departing from the port of Odessa were obliged to offload their cargoes in 18-20 meters of water to smaller boats capable of crossing the bar at Poti.

All the fortresses and garrisons of the Kuban valley were supplied from the ports of Odessa, Feodosiia and Kerch but regiments stationed in the central and eastern regions of the Caucasus received their supplies directly from the central Russian provinces. Thus the supplies

¹⁶ Jean de Reuilly, *Voyage en Crimée et sur les bords de la Mer Noire en 1803* (Paris: Bossange, 1806), p. 280.

¹⁷ Maria Guthrie, *A Tour, Performed in the Years 1795-6, through the Taurida, or Crimea* (London: T. Cadell, 1802), p. 25; Patricia Herlihy, *Odessa: A History, 1794-1914* (Cambridge: Harvard University Press, 1986), p. 121.

¹⁸ de Reuilly, *Voyage en Crimée et sur les bords de la Mer Noire en 1803*, pp. 207-08.

¹⁹ Samuel Gottlieb Gmelin, *Astrakhan Anno 1770: Its History, Geography, Population, Trade, Flora, Fauna and Fisheries*, trans. Willem M. Floor (Washington: Mage Publishers, 2013).

²⁰ On the fortress of Poti/Faş, see Mahir Aydın, "Faş Kalesi," *Osmanlı Araştırmaları* VI(1986): pp. 67-138. The port of Poti did not offer much to battleships as they were to lay anchor a few km from the shore. Against its disadvantageous climate and location, the Russians were to capture it because it was vital to connect with the Bukharan trade in India and China.

shipped for the army of the Terek and of Daghestan arrived first in Astrakhan, after a voyage of more than 1,100 km down the Volga, and then they were transferred by the Caspian Sea for the most part to the mouth of the Kuma, where they were taken up by the local people, on their little ox-carts impressed for the service, and reached their final destination after 15-20 days travelling.²¹ The mode of transportation was slow, expensive and difficult for military material, and this was especially true of weapons and ammunition coming from the Urals-Siberian region which arrived only during the spring floods of the Volga and the Dnieper. The difficulties entailed in moving reinforcements, equipment and supplies to the region from central Russia to the Caucasus region made the acquisition of Georgia as a base in which substantial forces could be fed and housed from local resources all the more important.

While the Ottomans were traditionally content to leave protection of the steppe approaches north of the Black Sea and the Caucasus to the Crimean khanate, which was their protectorate, they could at various times lend close support to the Crimean Tatars' efforts on the steppe or in the north Caucasus from the ring of Ottoman fortresses on the northern shores of the Black Sea. Before the 1770s the Ottomans basically had their own way, thanks in part to a strong navy, in seeking slaves, timber, mineral, and food-stuffs through trade with Abkhazia, Mingrelia, Guria, Imereti, and Samtskhe on the western shores of the Caucasus. The Imereti range provides a serious barrier for Imereti against invasions to the east, but the lowlands along the Rioni River made Imereti and its capital of Kutaisi easily accessible to Ottoman naval and military incursions. The same can be said of Guria and its cities of Poti and Ozurgeti just south of the Rioni River, which traditionally were also under Ottoman indirect control. On the other hand, most of Abkhazia and Svaneti consisted of high mountain valleys which were very hard to penetrate. To the southwest, the Georgians of Samtskhe and its capital of Ahıska were located on high plateaux and forbidding ranges south of the Imereti range, not easily accessible from either Iranian or Ottoman territory.

After losing strategic fortresses and strongholds to the Russians in the region between 1774 and 1812, the Ottomans had created new military strongholds and strengthened the existing fortresses on the north-eastern coastal line during the last two decades of the eighteenth century. From west to east, on the north-eastern coast of the Black Sea, the fortresses of Anapa, Soğucak (Sudjukkale) and Gelincik were rebuilt in the 1780s;²² it was a costly process to fortify and sustain the north-eastern coast of the Black Sea for the Ottoman treasury since building materials as well as food and other supplies had to be shipped from the Anatolian ports of İnebolu, Samsun and Trabzon.

²¹ LeDonne, "Geopolitics, Logistics, and Grain: Russia's Ambitions in the Black Sea Basin, 1737–1834," pp. 1-41. Since to supply the strongholds on the coast of the western Caucasus with provisions by land was not secure and practical, the Russians were to use Azov ports across the strait of Kerch, but Sevastopol and Nikolaev for artillery supplies.

²² On the re-construction and consolidation process of the fortress of Anapa, see Haşım Mehmet Efendi Kesbî, *Ahvâl-i Anapa ve Çerkes*, ed. Mustafa Özsaray (İstanbul: Kafkas Vakfı, 2012), pp. 18-21, 54-57; Cengiz Fedakar, *Kafkasya'da İmparatorluklar Savaşı: Kırmızı Giden Yolda Anapa Kalesi (1781-1801)* (İstanbul: İş Bankası, 2014), pp. 50-80, 82-85. The northern Black Sea coast depended on being supplied and reinforced not only by the sea but also the river-ways; the distance from the mouth of the Kuban to the Inguri ranged 430 km and the fortress of Anapa, possessing an open harbour, was 35 km far away from the western mouth of the Kuban. This vast stretch of coast offered several anchorages, some of which were naturally well-defended against intruders, others, with some inexpensive maintenance and repairs, would acquire the same advantages. In order to carry out an amphibious attack, the most proper and advantageous location was south-west because that part of the coast had sufficient depth enabling warships to get closer and to bombard the fortifications built on the coastal line from sea. According to Paul Guibal, Anapa was the most important military fortification among the Ottoman strongholds on the coastal line and had been well-fortified to impress on the Circassians the military strength of the Ottomans in the region. In general, holding the fortress of Anapa was very costly to the Ottomans since the Circassian tribes were not to pay tribute-tax to the Ottoman central government and furthermore their chieftains had been put on the regular payroll by the Porte. Arhiv Vneshnei Politiki Rossiiskoi Imperii, fond: 144, opis': 488, delo: 2303, pp. 55ob-56ob [Hereafter AVPRI].

Although the fortress of Soğucak was taken by the Russians during the Russo-Ottoman War of 1806-1812, it was ceded back to the Ottomans by the Treaty of Bucharest in 1812.²³ But in 1820 both Soğucak and Gelincik were abandoned by the Ottomans and this increased the strategic importance of the fortress of Anapa, just across the Kerch Straits from Russian-held Crimea.²⁴ It would be the only Ottoman stronghold on the north-eastern coast of the Black Sea during the Russo-Ottoman War of 1828-29. Further south, in the centre of the Black Sea's eastern shore, the Ottomans did still hold some points but even when, as was the case with Suhumkale, these combined both fortifications and good harbours, they were of little strategic significance due to the lack of viable communications with the interior. This made all more serious that the Ottoman loss of Poti on the south-eastern coast of the Black Sea in 1829.

The southern coast of the Black Sea was secured for the Ottomans by Edirne, Sinop, Samsun and Trabzon fortresses.²⁵ Besides the fortresses, there were a number of supply centres such as Bendereğli, Amasra, İnebolu, and Ünye along the southern coast of the Black Sea.²⁶ These centres were particularly vital to meet the needs of the fortifications and garrisons situated along the north-eastern and eastern coasts of the Black Sea. Since the end of the fifteenth century, the Black Sea has been considered as an inner sea by the Ottoman authority, these ports gradually lost their advantageous international transit capabilities, rather turned into internal trade points.²⁷ Pragmatically, from the point of the Ottomans, there was no need to keep a considerable navy on the Black Sea. In parallel with this, the fortifications also would be overlooked until the beginning of the seventeenth century.²⁸ At the first stage, the Cossack raids were on a small scale but their gradually increasing destructive potential worried the local administrations protecting the southern Black Sea coastal line.²⁹ After the second half of the eighteenth century – i.e. during the reign of Catherine II, the importance of the ports on the southern Black Sea coast would increase for security reasons at first step, particularly after the Treaty of Küçük Kaynarca in 1774, their potential of being international transit hub gained acceleration.

In central Anatolia, the city of Sivas was situated at a key junction of major caravan trade routes, which were reaching the Black Sea coast through Sinop, Samsun and Trabzon. Sinop, being situated along a narrow causeway and serving as a base and port for transport to the northern Black Sea, was one of the most significant cities in north-central Anatolia. Its deep harbour was the best along the southern seaway from Istanbul Strait to the Caucasus. Furthermore, it was the main point for the movement of people and goods between northern

²³ RGVIA, fond: 450, opis': 1, delo: 514, p. 1. The fortress of Soğucak possessed a strategic position, about 35 km south of the fortress of Anapa. Its citadel/castle was ruined but used as magazine by the Ottomans to fulfil the needs of the Circassian tribes inhabiting the region around the fortress. It had been slightly connected with tracks by which wagons would proceed to the river Kuban. AVPRI, fond: 144, opis': 488, delo: 2303, pp. 58-58ob.

²⁴ On the construction of the Gelincik port, see Kesbî, *Ahvâl-i Anapa ve Çerkes*, pp. 52-53. While heading southwards, the next stronghold was the fortress of Gelincik whose port was relatively wider and in good condition furthermore it would be easily approached by large ships. Most importantly, its strategic position has made it possible to defend against any naval attack. AVPRI, fond: 144, opis': 488, delo: 2303, p. 58ob, Paul Guibal, 4 (16) January 1829.

²⁵ Unlike three other port-cities, Edirne was not situated on the southern Black Sea coast but it had a very strategic junction connecting the roads between the Black and Marmara Seas, see Tayyib Gökbiçgin, "Edirne," in *Türkiye Diyanet Vakfı İslam Ansiklopedisi* (İstanbul: TDV, 1994), particularly pp. 427-29.

²⁶ The coast of Bendereğli was not protected against the northern gales, Minas Bijişkyan, *Karadeniz Kıyıları Tarih ve Coğrafyası, 1817-1819*, trans. Hrand D. Andreasyan (İstanbul: Edebiyat Fakültesi Basımevi, 1969), p. 20. While heading eastward, the next crucial point was Amasra which had two ports, one of which, situated on the western part, was accessible by ships, *ibid.*, p. 23. İnebolu was open to eastern gales and deprived of a functional port but ships could touch at its bay, *ibid.*, p. 25. Apart from being a supply centre, Ünye had sufficient features and background to build big ships, *ibid.*, pp. 35-36.

²⁷ Though along the southern Black Sea coastal line – i.e. from Istanbul to Batum, there were 123 quays in the sixteenth century; many of them were cancelled during the nineteenth century, see Yusuf Halaçoğlu, "Anadolu (Ulaşım ve Yol Sistemi)," in *Türkiye Diyanet Vakfı İslam Ansiklopedisi* (İstanbul: TDV, 1991), p. 127.

²⁸ İsmail Hakkı Uzunçarşılı, *Osmanlı Devletinin Merkez ve Bahriye Teşkilatı* (Ankara: Türk Tarih Kurumu, 1948), p. 445.

²⁹ On the Cossack raids against the south Black Sea coastal line, see Victor Ostapchuk, "The Human Landscape of the Ottoman Black Sea in the Face of the Cossack Naval Raids," *Oriente Moderno* 81, no. 1 (2001): pp. 23-95.

Anatolia and Crimea.³⁰ Although the port of Samsun had the best access to central Anatolia, and furthermore its hinterland was reaching southern regions – i.e. Mesopotamia, over the east of Anatolia - in compare with those of Sinop and Trabzon, it could not attract a great deal of attention from Istanbul until the Russo-Ottoman conflicts occurred in the second half of the eighteenth century.³¹ Trabzon was the last point of an ancient trade route that meandered around the north of Anatolia, through the Zigana Pass, to the valleys of the Tigris and Euphrates rivers.³² The fortress of Trabzon was the most strategic point in eastern Anatolia; that had been built on a series of steep cliffs, providing a ready defence in the event of any land or maritime attack. On the other hand, neither the natural harbour of Trabzon nor the port facilities were sufficient to handle large-scale transport of people or goods.³³

In general, it was possible for most vessels to cross from Istanbul to Trabzon in a few weeks, including stops along the way to trade or take on supplies. The duration of a direct trip could be shortened to a week or less given good weather. From the port of Trabzon, a ship could go across to the Crimea, anchoring at Kefe, and then continue into the Sea of Azov. For an Istanbul merchant, trying to include the Black Sea as part of any commerce with the east made economic sense. A roundabout journey by sea from Istanbul to Trabzon and then by caravan to Iran took a third of the time of a direct overland trip across Anatolia, and the possibility of a storm at sea was always preferable to the certainty of impassable roads and highwaymen.

³⁰ The natural harbour of Sinop, similar to Istanbul Strait, was protected against the north-western gales of the Black Sea that has made it advantageous vis-à-vis other ports and harbours on the Anatolian coast but since its disadvantageous hinterland, it did not have any growing potential. Mehmet Öz, "Sinop," in *Türkiye Diyanet Vakfı İslam Ansiklopedisi* (İstanbul: TDV, 2009), pp. 252-56. There were two shipyards building ships for the Ottoman navy, see Bijişkyan, *Karadeniz Kıyıları Tarih ve Coğrafyası, 1817-1819*, p. 28. For a detailed description of the fortress of Sinop in Russian official sources, by de Lafitte-Clavet, see RGVIA, fond: 450, opis': 1, delo: 503, pp. 1-3; delo: 505, pp. 1-2; delo: 507, pp. 1-4; delo: 510, pp. 1-2. A group of Nekrasov Cossack, about 400-man, had been settled there by the Ottoman government. AVPRI, fond: 180, opis': 517/1, delo: 113, pp. 194, 20 September (2 October) 1827, K. F. Nesselrode to A. I. Ribeaupierre.

³¹ Osman Köse, "18. Yüzyıl İkinci Yarısı Osmanlı-Rus Savaşlarında Karadeniz Liman Kenti Samsun," in *Geçmişten Geleceğe Samsun*, ed. Cevdet Yılmaz (Samsun: Form Ofset, 2006), pp. 273-81; Mehmet Öz, "Samsun," in *Türkiye Diyanet Vakfı İslam Ansiklopedisi*, ed. Türkiye Diyanet Vakfı (İstanbul: TDV, 2009), pp. 83-88. Although it possessed a wide harbour, it was not safe to shelter. Bijişkyan, *Karadeniz Kıyıları Tarih ve Coğrafyası, 1817-1819*, p. 32.

³² RGVIA, fond: 450, opis': 1, delo: 692, p. 1.

³³ RGVIA, fond: 450, opis': 1, delo: 689, pp. 1-3ob; Bijişkyan, *Karadeniz Kıyıları Tarih ve Coğrafyası, 1817-1819*, pp. 43-59; Heath W. Lowry and Feridun Emecen, "Trabzon," in *Türkiye Diyanet Vakfı İslam Ansiklopedisi* (İstanbul: TDV, 2012), pp. 296-301.

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INTERNATIONAL BLACK SEA MARITIME FESTIVAL

Radm. (R) Cem GÜRDENİZ

Abstract

A Maritime Festival is one of the best tools to bring Navies and Maritime communities together. The indivisible nature of the salt water universally unites the sailors and marines worldwide. A Maritime Festival in the Black Sea Region, bringing 6 littorals together was not experienced before. However, Turkish Navy has experience in this field, thanks to 2005 Marmaris International Maritime Festival, which was conducted between 27th April and 2nd May 2005 with cooperation Marmaris Municipality and governorship as well as Turkish Travellers Association under the Turkish Navy direction. In this speech Admiral (Ret.) Cem GÜRDENİZ discusses the planning and execution of the Marmaris International Maritime Festival projecting possibility to conduct Black Sea Region International Maritime Festival in the future.

International Black Sea Maritime Festival

Black Sea is a unique sea in every aspect. As part of the Mediterranean Sea, which is about just 0,5% of all oceans combined, Black Sea provides lifelines for its 6 littorals with special peculiarities having historical, political, geo-political, economic and environmental traits. But, what makes Black Sea so unique? Montreux Convention of 1936 gives special status to Black sea. It's the only sea, within the world oceans with special maritime regime. Montreux Regime provides stability and peace in this unique domain. So far, Black Sea has not become a Persian Gulf or Eastern Mediterranean throughout the decades after 1936.

I have witnessed the co-operation and collaboration period in the Black Sea after the demise of Soviet Union as an officer and Admiral. Turkey pioneered in the last 20 years many initiatives promoting and consolidating peace and stability in the Black Sea maritime domain. I was in the signing ceremony of the Black Sea Naval Cooperation Task Group (BLACKSEAFOR) as well as in the first meeting of Confidence and Security Building Measures (CSBM) in the naval field, pioneered by Ukraine. I was the project manager for the Operation Black Sea Harmony. So, I am very lucky to be the participant and speaker of First Black Sea International Maritime Security Symposium today.

Six Littorals of the Black Sea have achieved tremendous things in the past 20 years. What made Turkey a pioneer in these initiatives that I mentioned previously, was its actions as an honest broker in the area during the cold war? Admiral Özbal has pointed out in his speech perfectly that the Black Sea has specific traits, features and exemplary practices, which we had in the past. The Montreux Convention has survived World War II; survived Cold War, post-cold war and it will survive forever.

Therefore, let the spirit of togetherness of the six littorals prevail. I wish today that Romania were here with us. I don't know what the matter was. They couldn't make it but I wish they would be with us here for the next symposium. Throughout my tenure as an admiral, throughout my whole meetings, whole activities, academic or bureaucratic, Romanians were with us and the next time we would like to see Romanians with us too. And it's good to see our Russian, Ukrainian, Georgian and Bulgarian friends here. In 2017, I was speaker, participant in

this very hall for the CSBM in the naval field. And this is the second occasion under the Turkey's leadership. Once again I thank Turkish Navy for this achievement.

Now I will talk about a vision. A vision, which I did not coordinate with the navy staff. I don't know if this will come true in the future or not. The basics of why I have this vision come from my personal experience dating back to 2005.


First of all, Maritime Festivals are one of the best ways to bring navies and maritime communities together. I was the Project Coordinator of Marmaris International Festival at Ankara in April 2005. Admiral Özden Örnek, then Chief of the Navy liked the idea when he asked "why don't we hold a national maritime festival in Marmaris?" I said: "Sir, when I was the captain of Frigate TCG Gaziantep, I participated in Portsmouth International Maritime Festival in England in 1998. Let's make this an international one. So, I took the tasking to plan and coordinate the Marmaris International Maritime Festival 2005 and we did it. Why was it successful? Because, seawater unites. Let's go outside and dip our foot into the water of Istanbul Strait. There is no obstacle. You can feel the waters in the North Pole or Norfolk. You can feel the waters of The Cape Town. So we utilized this uniting effect of salt water in 2005.

We are grateful for this success to Admiral Örnek. Unfortunately he passed away a year ago.

So why am I talking about this Festival in detail? This is going to shed light on my vision for the future legacy of a Black Sea maritime festival. This was a joint venture with trilateral contribution from Marmaris Municipality, Turkish Navy and Marmaris governorship. It took almost a year for preparations and it took large amount of effort to finalize the project. It went perfect. 100 different activities on maritime connection ranging from sports, cultural, gastronomic and historic ones were simply put together. There were many traditional maritime activities. For instance, we asked for classical long boats from Turkish Naval Academy and we made wonderful rowing races among visiting warships crews belonging to 14 different nations. For the children we even had the biggest optimist championship in the Turkey's history. Swimming, yachting, sailing, Sea Scout teams competitions as well as beach volley competitions, were among those many sports activities related with the sea. We invited model ship associations and foundations from abroad and Turkey. Naval and maritime museums collections from Istanbul Naval Museum and Rahmi Koc Museum were brought to Marmaris. Furthermore, we had a boat show. So far 5000 people have participated in the maritime festival. We had concerts, from classical music to Turkish folk music. We invited presidential symphony orchestra from Ankara with the state choir and prepared a G Class Frigate as a concert platform. The 4100 tons ship was along sided at Marmaris downtown quay area. That was a fantastic sight. The orchestra, very prestigious not only in Turkey but also worldwide, performed Turkish National anthem as well as 14 different participating states famous pieces of music.

Main focus of the festival was 17 participating warships belonging to 14 nations. This was the first time ever in the Turkish Republic's history. Our then President Honorable Necdet Sezer was gun saluted by all these warships, during the naval fleet review.

Romania came with MIRCEA sail training ship. Russia came with 2 warships; landing ship AZOV and frigate PYTLIVY. Ukraine was represented with BALTA, an auxiliary ship.



Georgia sent their Chief of Navy. He was our guest of honour. Bulgaria was there with their sail training ship Kaliakra.

From 27 April to the 1st of May, almost 3000 crewmembers of the participating warships took part in Marmaris international maritime festival. Other than 14 nations, Poland and Hungary sent their show bands and groups. There were 300 volunteers from university students, teachers and Turkish Navy who contributed to the smooth flow of maritime festival activities.

Thanks to Commander of Aksaz Naval Base Rear Admiral Engin Baykal, for the perfect conduct of the festival. Thanks to Turkish Navy. More than 200 people worked in every bit of this festival to make it happen. As for transportation, bus and boat services were organized. 14 large transport boats served the crews of 17 different warships.

Can you imagine a nation founded in 1923 never conducted an international maritime festival until 2005 and once she decided to do so, she made the biggest one in the Mediterranean basin. In terms of participants, in terms of visitors and activities, that was the biggest International Maritime festival in the region.

Let's come to the point. Why do I talk about this?

I will share a vision with you. The vision is to be able to organize a Black Sea International Maritime Festival. We can achieve this vision; we can do that altogether. Because we already achieved this union in 1992 with Blacksea Economic Cooperation; BLACKSEAFOR and CSBM in the naval field in 2001; Blacksea Harmony in 2004; BSCF in 2005. So we can achieve Black Sea International Maritime Festival. We can rotate its chairmanship under different flag. This is not related to defence; this is not related to political or maritime security issues. This is sailor-to-sailor activity, promoting cultural and social unity. We can repeat it in every 2 years. Host nation may change in alphabetical order. It can be held in the first week of May. It's one of the good times in terms of spring time activities of navies as well as schools, naval academies and as such. Let's focus only on maritime culture and water sports. Let's invite only training ships. Let's make it for only cadets, civilian or military. This is a vision. I just brought this idea into your attention. This is a proposal from a retired admiral, to both the Turkish and all the littoral navies of the Black Sea.

RUSSIAN RHETORIC UNDERMINES FREE ACCESS TO THE BLACK SEA

Cdr. Marten Meijer, Ph.D¹

Introduction and research question

In November 2018, a serious incident took place in the Kerch Strait, which connects the Black Sea with the Sea of Azov, between Russian Navy ships and three Ukrainian Coast Guard vessels², in which all 24 Ukrainian crew members were captured. It is said that at least four of them were injured during the shelling and ramming by the naval ships of the Russian Federation. The Ukrainian vessels were confiscated by the Russian Federation (see photo 1).



Photo 1 . The three vessels of the Ukrainian Navy, which were shot at and confiscated by the Russian Federation on 25 November 2018 and whose crews were imprisoned in Moscow³.

In the following days, an empty Russian cargo ship was placed almost directly under the bridge over the Kerch Strait (see photo 2) to support the fact that the Russian Federation has the ability to block the access to the international waters of the Azov Sea. This so-called Sea Line of Communication gives access to important Ukrainian seaports such as Mariupol at the Sea of Azov, which is critical for the Ukrainian economy.

¹The content of this article is the responsibility of the author only and does not necessarily reflect the views of NATO or the Dutch government. The article is partly based on a lecture given by the author in June 2019 at a conference on the Maritime Security of the Black Sea in Istanbul, in which conference some representatives of the Russian Federation also participated.

²Although the three ships initially were called coast-guard vessels, they appeared to be two Ukrainian fast patrol vessels with sophisticated missile systems and a seagoing tugboat without any arms.

³<https://www.themoscowtimes.com/2018/11/26/russia-ukraine-clash-over-kerch-strait-explained-a63600>



Photo 2. In the days following incident in the Kerch Strait on November 25, 2018, the Russian Federation closed the access from the Black Sea to the Sea of Azov with an empty Russian cargo ship almost directly under the bridge.

In addition, fighter jets from the Russian Federation flew over this bridge with some regularity to demonstrate the capabilities of Russian forces in this conflict. Rumors were spread that the Ukrainian Coast Guard ships were about to blast explosive charges under these Russian and Ukrainian illegal bridge⁴. The Russian President Putin spoke on a national television show the day after the incident about this as an example of Ukrainian aggression to enter the territorial waters of the Russian Federation without permission. What he cleverly omitted was the fact that until 2014 these were the territorial waters of the Ukraine while the Crimea still was a part of its territory and that the Russian Federation had no control over these waters at all. Only after the illegal annexation of Crimea by Russia in 2014 can this claim be made on these waters. The central question in this article is whether this claim is justified and how this claim was communicated.

Structure of the article

This article describes how NATO's strategic communication is established according to current NATO doctrine and can be applied to this incident in the Kerch Strait. This is followed by a few examples of how international access to territorial waters is regulated in good and established international practices. Next, the NATO response to the incident in the Strait of Kerch in November 2018 is described. Finally, a conclusion follows and a number of recommendations for NATO's strategic communication, also with a view to possible incidents between NATO and the Russian Federation in the future.

⁴Szenasi, E. (2018): The Kerch Strait Incident: Why the 2003 Treaty Regulating the Azov Sea Rights has not been terminated by Russia. https://www.academia.edu/37913304/The_Kerch_Strait_Incident_Why_the_2003_Treaty_Regulating_the_Azov_Sea_Rights_has_not_been_Terminated_by_Russia

NATO's strategic communication

According to the decision of the North Atlantic Council, NATO's highest governing body, as of 17 July 2017, NATO's strategic communication concerns the use of all functions in the information domain, including information operations and psychological operations, to achieve the goals of NATO⁵. To this end, NATO has not only established political-strategic but also operational-level communication divisions to provide this strategic communication. This first and foremost involves mapping and understanding the information environment in which NATO's opponents' act, before sending messages to them or to the international community⁶. At the strategic level, NATO's core message is formulated, which always contains the elements of Collective Defence, common values and solidarity between allies. At the operational level in NATO, that is at the NATO headquarters in Naples, Italy and Brunssum, the Netherlands. This strategic core message is translated into the environments for which this operational headquarters is responsible. For NATO's headquarters in Brunssum, this environment includes the Baltic Sea and for NATO's headquarters in Naples, this includes the Mediterranean Sea and the Black Sea. However, following the incident in the Black Sea as described above, this operational headquarters in Naples did not send any specific message. Only some focused information collection took place in the vicinity of the incident in the following weeks. A delegation led by Ukrainian President Porochenko visited NATO Secretary-General Stoltenberg in Brussels within a week of this incident. The chairman of the NATO Military Committee, the most important advisory body to the North Atlantic Council, issued a statement classifying this incident of November 25, 2018 as Russian aggression at the end of May 2019, because the intervention and the underlying assumption of territorial waters was based on the illegal annexation of Crimea in 2014. The Russian reaction that followed immediately on this NATO statement was that NATO strategic communication is reminiscent of an old long-playing record, which remains stuck in a groove and therefore always plays the same song: the annexation of Crimea by the Russian Federation in 2014 is illegal. The Russian Federation has for years been denying this accusation of illegal annexation by pointing to the free elections that were held in Crimea in 2014, with the vast majority of the population choosing to join the Russian Federation⁷.

⁵Information operations are, for example, operations in which pamphlets are dropped above a target area of shelling or bombing to warn the civilian population of these impending shelling or bombing. These information operations are aimed at informing specific target groups. Psychological operations also inform certain target groups, but also try to change the views of target groups, whether or not through the selective use of information. Psychological operations require the explicit consent of the North Atlantic Council, whereby the public in NATO member states cannot belong to a target group of psychological operations. In everyday practice, this distinction is becoming increasingly blurred, also through the use of the so-called fake news, which is generated to influence people's behavior.

⁶ In everyday speech, the importance of listening over speaking is sometimes illustrated by the fact that man is created with two ears and only one mouth.

⁷ Free access across the Crimean Peninsula to Sevastopol, the only Russian naval port on the Black Sea, is indispensable for the Russian Federation and was the main driver for the Russian annexation of Crimea. This was again apparent from conversations that the author had with representatives of the Russian Federation in Istanbul. The fact that the Ukraine had already prepared leases for this Russian access does not support the wisdom of the Ukraine's international policies. Also the United States of America, a country that is abundantly blessed with a multitude of significant seaports on two oceans and the Gulf of Mexico, may be expected to have a little more understanding for a country such as Russia, which is much larger in size but which larger seaports can be counted on the fingers of two hands.

The practice of international access to the Baltic Sea through the territorial waters of Denmark.

Based upon article 17 of the United Nations Convention on the Law of the Seas⁸, ships have the right of free passage through territorial waters. Fishing vessels and warships do not by definition have this right of free passage, but may still pass through territorial waters under specific circumstances. For access to the Baltic Sea through, among others, the Kattegat and other territorial waters of Denmark, fishing vessels may pass on the condition that they do not carry out fishing activities during the passage. The restriction for naval vessels is that they cannot use these territorial waters to escalate a conflict. The free passage through the Danish territorial waters to the Baltic Sea or North Sea is already laid down in the Copenhagen Convention of 1857.

In practice, even during the coldest periods of the Cold War, these treaties did not give rise to the arrest of crews of fishing or warships, nor to the confiscation of these ships. During the passage through territorial waters, the country to which the waters belong runs the risk that these fishing vessels or naval vessels do not comply with these restrictions. This requires these countries to exercise some form of control. Conversely, this right to control also gives this country a strategic advantage because, through these ongoing controls, they are aware of ship movements of naval units, including countries with which they are not directly befriended.

The practice of international access to the Black Sea through the territorial waters of Turkey


The Black Sea is accessible from the Mediterranean Sea via the Sea of Marmara and the Turkish Straits that run through Turkey. It goes without saying that these are partly Turkish territorial waters. Every day more than a hundred merchant ships pass through this Turkish Strait, which economic significance is hard to overestimate (see photo 3).



Photo 3. A tanker sails from the Black Sea through the Istanbul Strait on to the Sea of Marmara and the Mediterranean Sea.

The passage through the territorial waters of Turkey is laid down in the Montreux convention of 1936. This convention imposes virtually no restrictions on civil shipping, albeit


⁸Remarkably, the United States and Turkey, the two largest NATO allies, have not (yet) signed this treaty.



in the interest of the smooth passage and safety of shipping a one-way traffic is imposed that changes direction two times per day. The Montreux convention does impose rather far-reaching restrictions on naval ships from states that are not on the Black Sea. For example, restrictions apply to the size of such naval vessels, their combat power and the duration of the stay in the Black Sea, which is limited to 21 consecutive days. After a period of 21 days has passed, a naval ship from a non-Black Sea state must first leave the Black Sea before a further 21-day period can be started.

Conclusions and recommendations for NATO strategic communication on the Kerch Strait

The practice of free passage of naval ships, including that of the Russian Federation, through territorial waters of, for example, Denmark and Turkey shows that international treaties impose virtually no restrictions on naval ships, as long as their presence in those territorial waters does not lead to escalation of a conflict. In the case of the incident in the Strait of Kerch, there can be no escalation of a conflict because, on the Ukrainian side, it was not about large naval ships, but only two very light fast patrol boats and a seagoing tugboat, none of which are escalatory behaviors. The rumors about explosives on board these ships have never been investigated or confirmed, so there was no risk of escalation due to this threat. Only on the basis of these facts alone can it be concluded that the Russian reaction through the firing and ramming of these Ukrainian ships should be seen as disproportionate and precisely as an escalation of the conflict between Russia and Ukraine and the innocent passage of these Ukrainian ships through whether or not territorial waters of the Russian Federation. Unfortunately, the strategic communication of the Russian Federation has always been aimed at claiming the Strait of Kerch as Russian territorial waters and thereby accentuating the fact that Crimea belongs to the Russian Federation. On the NATO side, effective strategic communication has for a long time been lacking in this case to place responsibility on the Russian Federation for the escalation in this incident. Only at the end of May 2019 did the chairman of NATO's military committee, NATO's highest advisory body, issue a statement condemning the Russian Federation of Aggression in this incident. This declaration, incidentally, placed more emphasis on the illegal annexation of Crimea than on the fact that it is good international practice to grant free passage through territorial waters, especially if these territorial waters are the only access to underlying international waters. However, based on the conclusion in this article, it is advisable to place more emphasis on the Russian aggression of shooting and ramming Ukrainian ships and injuring and capturing their crews. The question of whether or not the incident took place in international waters and whether the territorial waters of the Russian Federation or the Ukraine should have a secondary role, since other countries also grant free passage through their territorial waters to, for example, the Russian Federation for underlying to reach international waters. This reason has been used, among other things, in the case of this incident in the Strait of Kerch for a session of the international dispute tribunal on the United Nations Sea Convention in Hamburg on 25 May 2019 to declare the Russian intervention to be unlawful and order the release of Ukrainian crews. The Russian Federation subsequently stated that it did not recognize this tribunal and that it kept prisoners at least until after their trial in Moscow. This shows little consistency in Russian communication, since the Russian Federation has signed the United Nations International Convention on the Sea, of which Article 287 describes the validity of this Tribunal and Article 292 the immediate release of the crew and release of the confiscated ships if this tribunal has so decided. This inconsistency of the Russian Federation should receive considerable and continuous attention in NATO strategic



communication, because of the importance of the international legal order in general, of free access to the Black Sea and to the Azov Sea and of the welfare of the Ukrainian captured crews and their relatives in particular.



THE MONTREUX CONVENTION: THE STONEWALL OF SECURITY IN THE BLACK SEA

by Igor Delanoë, Ph.D.

Introduction

Recent events taking place in the Black Sea region have highlighted the “maritimity” of *the Black Sea*. The access to the Black Sea from the Mediterranean, and vice-versa, were at the center of the competition between the Russian Empire, later the USSR, the great Western powers and the Ottoman Empire, later Turkey. The Turkish Straits and the Sea of Marmara—were both a geopolitical goal for Czarist Russia and the USSR, as well as an object of dispute between the Russians and the Ottomans. For the great Western powers, it fitted in a wider geopolitical game designed to contain Russian ambitions in the Mediterranean and in the Middle East. The signature of the Montreux Convention in 1936 satisfied both Turkish aspirations to recover sovereignty over the Straits and Moscow’s expectations regarding the limitation of the presence of non-Black Sea powers – i.e. Western powers – in the Black Sea. Framing the commercial and maritime traffic across the Straits, the terms of the text define above all under which conditions military vessels can sail through the Turkish Straits, and by extension, into the Black Sea. The tonnage, the duration and the status of the warship (belonging to a Black Sea or to a non-Black Sea country) are taken into consideration. Signed in 1936 for an initial period of 20 years, the Montreux Convention has been since then tacitly extended by the signatories, despite all the critics and challenges it faced. After more than 80 years, the document remains in force.

All along the 1990s and 2000s, the compliance with the Montreux terms has emerged as one of the key point of convergence between Turkey and Russia, who agree upon the fact that the text should not be put under question. This paper argues that the Montreux Convention, in many respects, lies at the heart of the security equation in the Black Sea naval stage. Its legal power goes beyond the Turkish Straits and covers the entire maritime stage of the wider *Black Sea*. Yet, the spirit of the text seems to be at risk. Tensions linked to the resurgence of Russian Navy in the Black Sea and the Eastern Mediterranean, the role played by other major naval stakeholders (NATO, the US...), increasing commercial traffic, which causes sometime incidents, exert pressure on the spirit of Montreux. After having dealt with the historical background which paved the way to the signature of Montreux, this article will explore the new regional security context faced by the text.

The Robustness of the Montreux Convention in the Light of History

Before the Montreux Convention, the issue of the Straits was at the heart of the relations between the Ottoman Empire, the Russian Empire and the great Western powers. Three main periods encompassing different historical eras can be roughly highlighted: the total closing of the Straits (from the mid-15th to the late 18th century), the Eastern Question and the competition between European powers and the Russian Empire (19th century) and after World War I to 1936 and the signature of the Montreux document.

After the Ottomans seized Byzantium in 1453, the Straits were mostly closed from the 15th to the late 18th century, and one had to be granted a special authorization from the Sultan to have the possibility to sail through them. This was a superior privilege very occasionally

granted by the Sultan, who nevertheless never wanted to disrupt the flourishing East-West commerce Venice had laid during the Middle Age. In that perspective, the Venetian merchants received limited authorizations to carry on their maritime commerce and had the possibility to sail through The Turkish Straits¹. However, the Ottoman Empire tended to consider the Black Sea as domestic waters not subject to foreign navigation. The principle of the total closing of the Straits gradually vanished with the pressure of the Russian Empire on the northern shore of the Black Sea during the 17th and 18th centuries. If Peter the Great² succeeded only in grabbing an outlet on the Azov Sea (Russo-Turkish treaty of 1700), Catherin the Great was far more successful. With the signature of the Russian-Turkish treaty of 1774, Russia was granted the right to directly access the Black Sea and received the freedom of navigation for its merchant vessels in the Black Sea and in the Straits. As mentioned by the article 11 of the treaty, this freedom of navigation was explicitly defined as an “obligation”, not as a “favor”. Starting from this period, the various legal texts dealing with the navigation in the Black Sea which were signed through the decades all make the distinction between merchant shipping and war vessels.

The issue of the control of the Straits lies at the heart of the Eastern Question during the 19th century. No less than a dozen of various treaties were signed between the great European powers, the Russian Empire and the Ottoman Empire to define, frame and regulate the maritime traffic across the Straits during the 19th century: the Treaty of Edirne (1829), the Convention of London (1841), the Treaty of Paris (1856), the Treaty of London (1871) All these texts reflect the harsh competition between Western powers and Russia to control the access and the navigation in the Straits, in the context of a declining Ottoman Empire.

After World War I, the signature of the Treaty of Sevres (1920) appears as a first attempt to settle the issue of the Straits in a new geopolitical context. After four centuries of sovereignty over the Turkish Straits and the Sea of Marmara, Turkey was deprived of the control of the Straits, according to the conditions set by the document of Sevres. The text acknowledged the principle of total and unlimited freedom of navigation, for all types of vessels, whatever the context (peace, war) may be. An international commission was to be set up to enforce the terms of the text and the freedom of navigation, while the Straits had to be fully demilitarized. Although this text never entered into force, the subsequent Convention of Lausanne signed three years later still deprived Turkey of the sovereignty over the Straits: the area had to be demilitarized and an international commission was set up to enforce the terms of the Convention. Moreover, Western powers committed to provide security guarantees to Turkey. Hence, for the first time after four centuries, Turkey was excluded from the regulation of navigation in the Straits. As a consequence, the context created by the signature of the Treaty of Sevres paved the way for a greater convergence between the young Turkish republic and the nascent Soviet Union, which were both dissatisfied with the terms of the Convention of 1923.

Frustrated by the text of Lausanne, Ankara initiated new discussions in order to come to a new agreement regarding the Straits. The Montreux Convention signed on July 20, 1936, can be seen in many respects as a success of the Turkish diplomacy. Its signature occurred indeed in the mid of the 1930s, in the context of raising tensions across Europe, and it is the very sole example of a successful and peaceful revision of an international treaty, moreover occurring in such a difficult international context. Turkey’s aspiration to regain sovereignty over the Straits was satisfied whereas Moscow saw the text as the best guarantee to create a

¹Tolga Bilener, « Les détroits, atout stratégique majeur de la Turquie » [« The Straits, Turkey’s Major Strategic Asset »], AFRI, volume VIII, 2007, p. 741.

² Peter the Great (1672-1725) was the first Emperor of Russia from 1682 to 1725.

buffer against a greater Western influence in the Black Sea basin. The text of Montreux makes a clear distinction between Black Sea countries and non-Black countries, peace time and war time, Turkey being neutral and Turkey being at war, merchant vessels and warships. According to the article 14, the overall tonnage of non-Black Sea countries' war vessels transiting the Turkish Straits cannot exceed 15 000 tons at any given time. The maximum tonnage of non-Black Sea warships in the Black Sea cannot exceed 30.000 tons whereas they are not allowed to spend more than 21 days in the Black Sea basin (article 18).

Three key aspects of the Lausanne Convention were eliminated with Montreux:

- The demilitarization of the Straits
- The International Commission
- The security guarantee provided by the great powers to Turkey
-

The Montreux Convention resisted Stalin's pressure. Indeed, after the World War 2, the Soviet leader claimed military bases for the Soviet Union in the Straits, arguing that Turkey had been unable to prevent the irruption of hostile naval forces (Nazi Germany vessels and Italian naval forces) in the Black Sea basin during the war. These air and naval military bases were supposed to provide security guarantees to Moscow against potential future adversaries. The United States stood firm with Ankara. In a letter to his Secretary of State James Byrnes, US President Harry Truman wrote:

*“There is not a doubt in my mind that Russia intends an invasion of Turkey and a seizure of the Black Sea Straits to the Mediterranean. Unless Russia is faced with an iron fist and a strong language, another war is in a making. Only one language they understand: how many divisions have you?”*³

It is noticeably the first concrete illustration of American support to the Montreux text. Not being a signatory State of the document, the US traditionally advocates for the absolute freedom of navigation. In that sense, the Convention of Montreux tends to be considered more as an obstacle than anything else in Washington's eyes.

USSR's pressure and Stalin's claims precipitated Turkey in NATO's arms. Ankara joined the Alliance in 1952, together with Greece, in a move that could be seen as an attempt by the Alliance to impede the expansion of Soviet influence over the Balkans and beyond, in the Middle East. The death of Stalin in 1953 prevented the Soviet leader to ditch USSR's participation to the Convention. Moscow could have legally walked away from the text in 1956, according to the terms of the document. Yet, after Stalin's death, the USSR put on the backburner its demands regarding the Turkish Straits. However, *de facto*, the Black Sea was considered as the so-called “Soviet Lake” during the Cold War, since NATO did not really seek to challenge Soviet influence in the *Black Sea*.

More than 80 years after its signature, the text of Montreux is still in force. Its robustness in the light of history can be explained by the three following pillars which lie at the heart of the document:

³ Letter of Harry Truman to Secretary of State James Byrnes, 5 January 1946. The text of the letter is entirely available at the following address : <https://teachingamericanhistory.org/library/document/letter-to-james-byrnes/>

- Turkey's security provided by the total sovereignty of Ankara over the Turkish Straits and the Sea of Marmara The freedom of navigation for merchant vessels,
- Security guarantees provided to other Black Sea stakeholders – and mainly to Russia – regarding the transit of warships.

The Convention of Montreux and Contemporary Security Issues in the Black Sea

When the Montreux text was signed, there was no international agreement regarding the law on the sea. In 1982, nearly half a century after the signature of the Convention of Montreux, the International Convention on the Law on the Sea was signed in Montego Bay. This document has created a legal space for regional agreements to exist. Consequently, in the Black Sea, there are two regimes which coexist at a time: the Montreux regime and the text of 1982⁴. After the collapse of the USSR in 1991, and the subsequent vanishing of the so-called “Soviet lake” in the Black Sea, the legal power of the Montreux document started to concretely extend from the area of the Turkish Straits *strictosensu* to the whole Black Sea maritime basin. With the opening of the *Black Sea* to the international navigation, including military navigation, the Montreux text has more to do today with who can sail, and upon what conditions, in the Black Sea, than before 1991, when the Black Sea basin was virtually closed to international shipping.

Following the dramatic retrenchment of Russia's influence on the northern shores of the Black Sea, Ankara, while being a NATO member, undertook to play a special role regarding the regional security context in the Black Sea. Since 1991, Turkey has taken the lead to propose various initiatives related to the Black Sea regional stage:

- Black Sea Economic Cooperation (1992)
- the BLACKSEAFOR naval task force (2001)
- “Black Sea Harmony” naval operation, in 2004

Gradually, during the 2000s, the Black Sea region became a ground for a renewed competition between NATO and the EU, on the one hand, and Russia, on the other hand. In parallel, the text has had to face more challenges, starting with an increasing merchant traffic. If in 1936, an average of 17 vessels a day crossed the Turkish Straits, in 2017, this figure is nearly 10 times higher, with 130 vessels a day. In 2017, more than 8 800 tankers navigated through the Turkish Strait⁵. This issue raised concerns in Turkey in the first half of the 1990s. Ankara first wanted to introduce new rules of safety as early as 1994 to face the growing commercial traffic, prompting protestations from Russia, Ukraine, Bulgaria, Greece⁶ and Romania. These negative reactions compelled Turkey to negotiate bilaterally with Moscow, and in 1998, new safety rules were eventually introduced by Turkey, satisfying the other regional actors.

Moscow had also an interest to come to an agreement with Ankara regarding the regulation of the maritime traffic across the Turkish Straits. Russia's southern ports – mainly

⁴ So far, there is also the Russian-Ukrainian agreement on the Sea of Azov signed in December 2003. According to this text, the Azov Sea is considered to be domestic waters of both Russia and Ukraine.

⁵ Statistics quoted on the website of by the Ministry of Foreign Affairs of Turkey: “Note on the Turkish Straits”: <http://www.mfa.gov.tr/the-turkish-straits.en.mfa>

⁶ It must be recalled that most of the merchant vessels sailing in the Black Sea, and especially to and from Russia, belong to Greek ship-owners and companies.

Novorossiysk – have started to play a greater role in Russia’s economy and maritime commerce, especially regarding oil export. Indeed, most of Russia’s oil production is exported via the Black Sea corridor (nearly one third of Russia’s yearly oil exports). Novorossiysk is Russia’s first port for freight and a major terminal for the export of wheat. Of Russia’s four maritime facades – Azov-Black Sea – Baltic – North/Arctic and Pacific – the Azov/Black Sea is by far the most dynamic one, with 34,1 % of Russia’s overall freight transiting through it (269 million of tons) in 2017. Novorossiysk is Russia’s first port, with a major wheat terminal (6 million of tons exported in 2017) and a critical center for oil export (55 millions of tons exported in 2017)⁷. In September 2018, Turkey introduced new regulations regarding maritime traffic in the Turkish Straits, prompting some Russian energy actors to complain that the new rules were creating costly delays for inbound and outbound tankers. In January 2019, up to 39 million barrels of Russian and Kazakh oil were stuck for at least 2 weeks in the Black Sea, waiting for the greenlight of Turkish port authorities to cross the Turkish Straits⁸.

Renewed tensions between Russia and the Euro-Atlantic community since the Ukrainian crisis pose another challenge to the spirit of the Montreux Convention. Recently, in 2018, naval skirmishes in the Azov Sea between Russia and Ukraine culminated with the Kerch incident in late November, shedding light on the relevance of maritime security issues in the Black Sea basin. Russian naval rearmament in the Black Sea, which had started in the early 2010s, before the 2014 crisis, was later bolstered by the annexation of Crimea. Following the Ukrainian crisis, the Black Sea has spectated a growing NATO naval presence to check Russia’s expansion of influence. In that context, some attempts to try to circumvent the spirit of the text, or at least to push the text to its limits, may be in the making. More precisely, after the Azov skirmishes in late 2018, some extra-regional actors have started to figure out how they could deal with an enhanced Russian naval footprint in the Black Sea through the naval vector, in partnership with some Black Sea stakeholders⁹.

Since they are the two main naval Black Sea powers, Turkey and Russia play a singular role on the regional naval security stage. As far as they are concerned, the Convention of Montreux remains a persisting convergence point and a common ground for both Ankara and Moscow. This was the case even during the Russo-Turkish dispute in late 2015, early 2016. During this period, despite serious bilateral tensions, a Romanian proposal to create a NATO naval task force in the Black Sea was barred at the Alliance’s summit in Warsaw¹⁰.

⁷ Statistics of Russia’s Association of Commercial Ports: <http://www.morport.com/rus/content/statistika>

⁸ «В Босфореобразовалисьсамыедлинные с 2014 годаочередизтанкеров» [« Longest Line of Tankers formed in the Bosphorus since 2014 »], RBC, 22 January 2019.

<https://www.rbc.ru/economics/22/01/2019/5c4746a69a79472a8b74ba95>

⁹ Read in particular Lieutenant Commander Jeffrey R. Frost, “Developing a Black Sea Strategy”, US Naval Institute Blog, May 28, 2019.

<https://blog.usni.org/?p=28157>

¹⁰ See Igor Delanoë, “NATO Black Sea Flotilla. A reef in the Turkish Straits”, Russian International Affairs Council Blog, April 27, 2016. https://russiancouncil.ru/en/blogs/igor_delanoë-en/2443/

Conclusion

In conclusion, the following takeaways can be made:

–The Convention of Montreux has removed the issue of the Straits from the agenda and the geopolitical competition between Turkey, Russia and the Western powers. As a result, the region has not spectated any conflicts related to the Turkish Straits for nearly a century. In the light of history, it appears as a profound rupture.

–There are overlapping interests for Russia and Turkey to maintain the *status quo* on the Turkish Straits, each of them having their own reasons to do so. Russia still considers the document as the best legal barrier to impede the expansion of US and NATO naval footprint in the Black Sea, whereas for Turkey, this has more to do with the sovereignty over the Straits.

–In the absence of any Black Sea regional security architecture, which seems unlikely to be created in the near future, Montreux remains the best guarantee of stability for the area.

Yet, some Black Sea countries tend to consider today that the tonnage and duration limitations for non-Black Sea warships visiting the Black Sea do not provide them any security guarantee, in the context of renewed tensions with Russia.

MONTREUX CONVENTION AND SEA OF PEACE: “THE BLACK SEA” (TURKISH PERSPECTIVE)

by Prof. Dr. Mitat ÇELİKPALA

Since the collapse of the Soviet Union, Turkey’s so-called “regional ownership” policy in the Black Sea has largely been shaped by its desire to develop a regional cooperation scheme involving the Black Sea countries. Turkey, a longstanding NATO member, thus sponsored a number of multilateral economic, military and political cooperation mechanisms to provide for the security and stability of the Black Sea by the littorals. The Black Sea Economic Cooperation (BSEC) which was established in 1992, the Black Sea Naval Co-operation Task Group (BLACKSEAFOR) in April 2001 and the Operation Black Sea Harmony in March 2004 are among the multilateral cooperation schemes that were designed to this end. The idea behind the foundation of such multilateral mechanisms was preventing the region from turning into a theatre of military conflict.

These regional security initiatives indicated that maintaining special relations with Russia without alienating its NATO partners was an important pillar of Turkey’s Black Sea policy in the 2000s. This has also been one of the main reasons for Ankara’s determination to strictly implement the clauses of the 1936 Montreux Convention, which regulates the transit of warships through the Turkish Straits and guarantees the freedom of passage of civilian vessels in times of peace and war.

The Montreux Convention, as the concrete result of the interwar political environment and The Turkish-Soviet dialogue in 1920 and 30s, signed on 20 July 1936. The Convention gives Turkey full control over the Turkish Straits, guarantees the free passage of civilian vessels in peacetime. The convention makes a clear differentiation between the Black Sea littorals, i.e. Turkey, Bulgaria, Romania, Ukraine, Russia, and Georgia and non-littorals. The Montreux Convention since then has been an essential element of the Black Sea security and a source of stability for Turkey in peacetime and wartime for decades. From Ankara’s perspective, the Convention is understood as one of the most important achievements in Turkey’s recent political history and played a major role in keeping the Black Sea region out of the NATO-Warsaw Pact confrontation throughout the Cold War era.

OVERVIEW OF THE BLACK SEA ECONOMY

by Hıdır İlyas KARABIYIK

Turkey is an active signatory and contracting state for main IMO Conventions as well as the Memorandums of Understanding for Black Sea and the Mediterranean regions. Turkey has become party to more than 20 major IMO Conventions and Protocols in the last 15 years and is a Category “C” Member Of The IMO Council since 1999. Turkey fully adopts the IMO principles of environmental protection and prevention of marine pollution by ships and works in this direction.

The Black Sea has a strategic location connecting Balkans, Europe, Anatolia, and the Caucasus region with the contribution of maritime and energy crossroads. In addition it holds one of the world’s largest known reserves of gas and oil and about 16 million people inhabit the coastal area.


The Black Sea has over 20 big commercial ports, of which half of these can handle large commercial vessels. Most of these ports serve for general Cargo and bulk commodities but the volume of container handling is increasing day by day in the region. Huge investment projects are ongoing such as Anaklia in Georgia and Marmara region. Actually Derince, Karasu, Zonguldak and Samsun ports in Black Sea region have railway connection as well as connection with logistics centers and dry ports planned to be built in the region. New opened Baku Tiflis Kars railway, Marmaray which is undergoing the İstanbul strait and 3. bridge railway sections are increasing the potential usage of multimodal transport and inland surface connections of Black Sea.

Commercial vessels operating in the Black Sea carry four general types of cargo-containers, raw materials, grain, and petroleum. Large volumes of containers move through Constanta, Odessa, and Novorossiysk, while other ports such as Zonguldak are specialize in raw materials such as coal. More recently the Black Sea has become an important transportation corridor for the shipment of oil and gas from the north eastern coastal shelf; and for pipeline exports, which run from the Caspian Basin through Georgia, Turkey, and Russia.

According to the datas of digital platform sea-web, the controlled fleet by Black Sea nations is over 58 million Dwt’s in 2018. Russia and Turkey’s national merchant fleets are larger than any other Black Sea nations, although presumably, because they have international ports elsewhere, some portion of these vessels operate on non-Black Sea trade routes.

While the project capacity of 78 active shipyards in Turkey is 4.4 million dwt per annum, 15 of these shipyards are located in the Black Sea Region and the total capacity in the region is 537.8 thousand Dwt and it has a share of 12% in general. The investment of 8 shipyards in the Black Sea Region continues and the total capacity of these shipyards is 482.5 thousand Dwt.

With the high contribution of different subsectors, maritime economic activities form a strong sector in Turkey offering almost one point two million of employment with a total turnover of 17,5 billion USD which represents %2 of total Turkish GDP in 2017. Maritime cargo transport, Ship construction & maintenance, port services, fishing and aquaculture are the main maritime subsectors.



So it can be said that maritime economic operations play a great role not only for the economy of Turkey but also for Black Sea nations and it seems that the strategic and economic importance of Black Sea will increase in the near future.

THE BLACK SEA ENERGY ROUTES AND THEIR EFFECTS OVER MARITIME TRANSPORT

by Assoc.Prof.Burak Şakir Şeker

Introduction

This study investigates the current state of the pipeline race in the Black Sea region and the energy transmission corridors there.

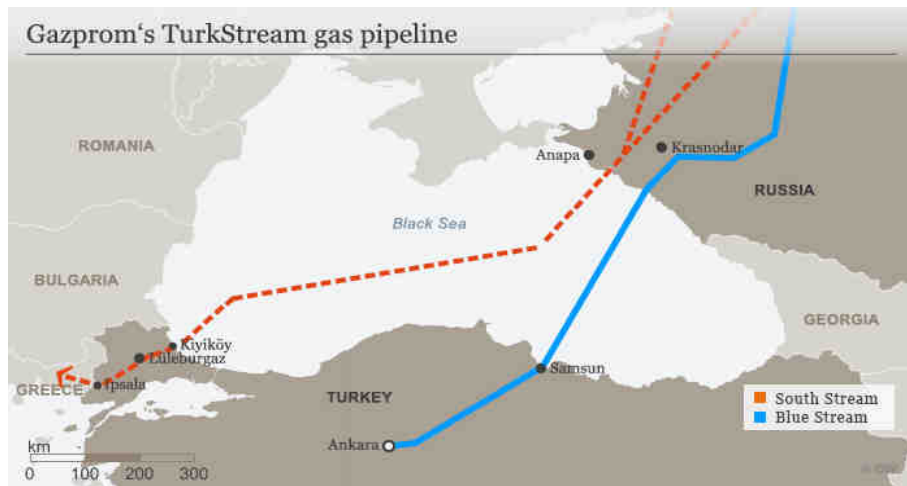
Most importantly, the study states that the Black Sea region is ideally located within the scope of transporting oil and natural gas from Eurasia and the Caspian region to Europe. Thus, European Union (EU), Republic of Turkey and Russian Federation (RF) agree that it poses a very important role in their regional energy security.

However, these energy policy objectives are in conflict with the producer countries and national interests or the others in this region. This contradiction makes this paper an excellent research topic.

This research provides a comprehensive overview of existing and planned energy infrastructure projects aimed at improving regional Black Sea energy security, taking into account other contiguous regional studies.

In this context, the study clearly demonstrates the potential of the Black Sea as a key transit area for oil and also as a strategic transit hub for natural gas in the event of a common regional agreement between frequently conflicting geopolitical interests.

In this study, the following conclusion emerged that only the actors who choose Turkey as a strategic partner in the Black Sea will be successful in the competition of energy interests that would be popped up soon.



Source: Deutsche Welle, 2019. <https://www.dw.com/en/turkstream-who-profits-who-loses-out/a-46364057>

Black Sea Energy Security and Maritime Transportation

The Black Sea region is a critical geographic area for global trade, but sometimes faces the challenge of conflicting geopolitical interests. This inland sea, which has various straits, is considered as border and bridge at the same time. It has the conflicting interests of various actors in many regional and sub-regional structures.

The Wider Black Sea region, in which most of the west coast is currently the European Union borders, the north and the northeast coast is dominated by the interests of Ukraine and Russia, eastern coast belongs to Georgia while the southern shore as an area of a continent it belongs to Turkey (Melvin, 2018).

At the same time, the Black Sea region provides a space for various cooperative initiatives, especially on energy transit routes. The Black Sea region is a poker table in which new dimensions of European energy security are emerging, with transition countries, producing countries and leading stakeholders (Institute of Peace and Conflict Studies, 2015).

More specifically, the Black Sea is one of the main energy transit routes from the Caspian Sea and Russia to the EU markets. Despite this apparent interdependency, harmonized co-operation is not a guarantee.



Source: AFP, 2019. <https://www.france24.com/en/20180830-turkstream-pipeline-nearly-complete-gazprom>

Energy has become a controversial issue in the region rather than unifying. Whether they like it or not, all countries in the region have to participate in energy policies. Oil and gas production and transport in the wider Black Sea region have a direct impact on the formation of regional energy alliances, but are subject to regional and international geopolitical developments (Tunsjø, 2013).

Black Sea region, an area where the conflict of interests of various international players, including the EU, RF and other coastal countries, creates a very dynamic geopolitical landscape. The region was historically located at the crossroads of many important trade routes connecting Europe to Central Asia and the Middle East and Russia to the rest of the world, and the struggle to control this commercial intersection was focused on the Istanbul Strait and the Çanakkale Strait. The actor, controlling the straits, effectively controlled the entire Black Sea basin, including trade (Garibaldi, 2008).

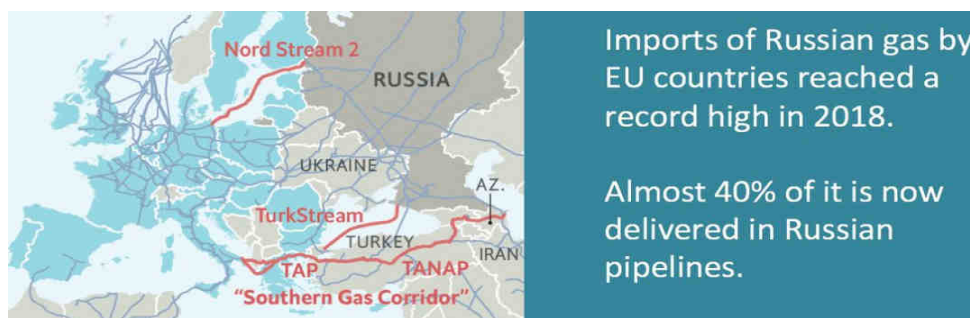
The current importance of the Black Sea region has an additional dimension of energy and transit routes highlighted by two long-term trends: (Sperling, Kay, Papacosma, 2013).

- Increased dependence of EU countries on hydrocarbon imports from non-EU countries,
- And increased oil and gas export capacity on the supply side of the RF and Caspian countries.

Ensuring long-term energy security, i.e. access to sustainable alternative oil and gas and transit routes, poses a number of challenges for the EU. The EU should focus on a mutually beneficial partnership with the Caspian suppliers due to the significant export volume of hydrocarbons and the potential for crossing with Black Sea countries via pipelines and sea routes (Weiss, Larrabee, Bartis, Sawak, 2012).

As net hydrocarbon importers, most Black Sea countries can support EU energy supply interests if they adopt the same approach and priorities regarding supply security. Beyond the hydrocarbon transition, there are two ways to pave the way for regional energy cooperation: (Chifu, 2013).

- Offshore research for conventional oil and gas,
- Onshore exploration for unconventional hydrocarbons such as Bulgaria's visible potential and renewable energy infrastructure.



Source: Economist, 2019. <https://www.economist.com/business/2019/01/05/a-plan-to-reduce-europes-dependence-on-russian-gas-looks-shaky>

The Black Sea region has recently become more critical in terms of global energy security. Many actors, such as China, have turned to the goal of building strategic partnerships in the Black Sea region due to increasing energy demands (Wang, 2015).

At this point, it can be said that all the riparian countries in the Black Sea region are trying to accelerate their regional geopolitical status. Ukraine, for example, wants to play a different and important role in this dynamic marine region, despite its painful period with the RF. Ukraine strives to pursue a multidimensional foreign policy using the differences between the actors in order to strengthen its position and leverage the balance between Russia and the EU. (Bahgat, 2006).

Another example stands out as Bulgaria. Although the country has historically been seen as friendly to Russia by other actors, its withdrawal from some refinery, terminal, pipeline and nuclear power plant agreements with Russian companies may change this view (Milina, 2013).

The Black Sea coastal states have competitiveness and strategy-setting initiatives in both marine energy management and energy supply issues. The RF sees the Black Sea basin as an opportunity to realize its economic and political objectives based on resource exports, particularly by establishing and controlling physical and direct connections with the countries where it exports energy (Šefčovič, 2016).

Other riparian countries, such as Georgia, Romania and Ukraine, rely on their definitions of maritime energy security, to attract energy transmission lines that reach European markets and to control such transit infrastructures. While Romania and Bulgaria are working to develop domestic and unconventional hydrocarbon resources, they are also looking for ways to import new energy resources (Young, 2019).

Last but not least, the European Union remains a part of the energy game in this region, which combines its political, energy security and interests while also being build its future plans on this strategy (Dreyer, Stang, Mandil, Henderson, 2014).

When all analyses are taken into consideration, it is a fact recognized by all parties that Turkey is arguably the most important player in the regional energy landscape. Although Turkey is involved in various energy-related initiatives in the Black Sea basin, it is currently also very careful for betting only specific gas transit projects those not hampering the relations with others (Veen, 2012).



Source: Republic of Turkey Ministry of Energy and Natural Resources, 2019.
<https://www.enerji.gov.tr/en-US/Pages/Natural-Gas-Pipelines-and-Projects>

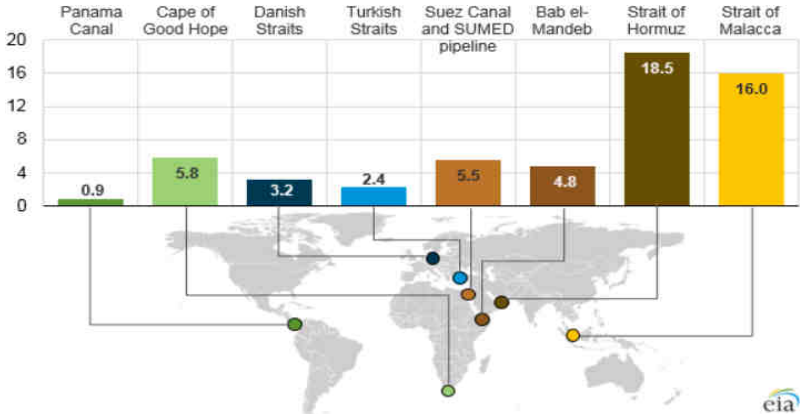
In terms of energy, it is an indisputable fact that Turkey is a net importer and Turkey itself has been establishing all top of the strategies being aware of it. Therefore, the direct interest of Turkey for all regional energy initiatives have always been available and also can be estimated in advance that it is inevitable that any kind of attempt excluding Turkey out of the game will be a failure (Lembke, Voinescu, 2006).

Currently the majority of imported natural gas for the sake of Turkish energy security is supplied from Russia (about 53%). However, Central Asia and potentially the new sources in the Middle East are some of Turkey's strategic interests for the diversity of supply chain (Grison, 2013).

This fact will be helpful to explain why Turkish government is focused on transforming its country into a regional energy transportation hub. Once this goal is achieved, and after the domestic energy market demand is provided, the remaining energy potential can be exported again (Pumphrey, 2012).

Turkey, as being located at the crossroad between major hydrocarbon exporting countries and importing actors, is to have a strategic advantage by its geographical location. In this case, this reality provides Turkey, not only for the East-West energy projects but also for North-South initiatives, to be an interesting partner position (Cohen, 2014).

Turkey, despite all these goals, continues to work to reduce the possibility of major risks faced because of the oil tankers traffic in the Turkish Straits. The volume of hydrocarbon resources exported from the Black Sea through the Turkish Straits is gradually increasing. At the same time, the number of tankers crossing the Turkish Straits also significantly makes the environmental risks greater in the region. Thus, in the long term, Turkish Straits will not be able to provide the necessary flexibility for the increased tanker traffic. At the end, due to the challenges in the Turkish Straits, Turkey does not support any sort of project using the related waterways rather than pipelines or other thought-provoking projects (Wigen, Blakkisrud, Kolstø, 2011).



Source: EIA, 2019. Volume of crude oil and petroleum products transported through world chokepoints (million b/d). <https://www.eia.gov/todayinenergy/detail.php?id=32292>

Turkey's geopolitical position makes it the most important energy partner in the Black Sea. Additionally, the EU may implement energy cooperation initiatives or projects in cooperation with Turkey taking into consideration its geopolitical positions for critical infrastructures. However, in the worst-case scenario as result of a potential conflict, Turkey can slow down the EU's energy plans in the region by preventing these projects.

If the EU bases its energy security on supply diversification initiatives, then it should clarify its driving reasons. Again, in the context of EU energy security, if it is aimed to significantly reduce energy imports from RF and diversify energy transmission lines, then Turkey would be automatically key strategic partner. However, if the purpose of energy diversification is mainly to secure more transit routes, Russia's representation as a strategic partner for the EU will be radically increasing regardless of the US coercive initiatives for the LNG export (Adzinbaia, 2017).

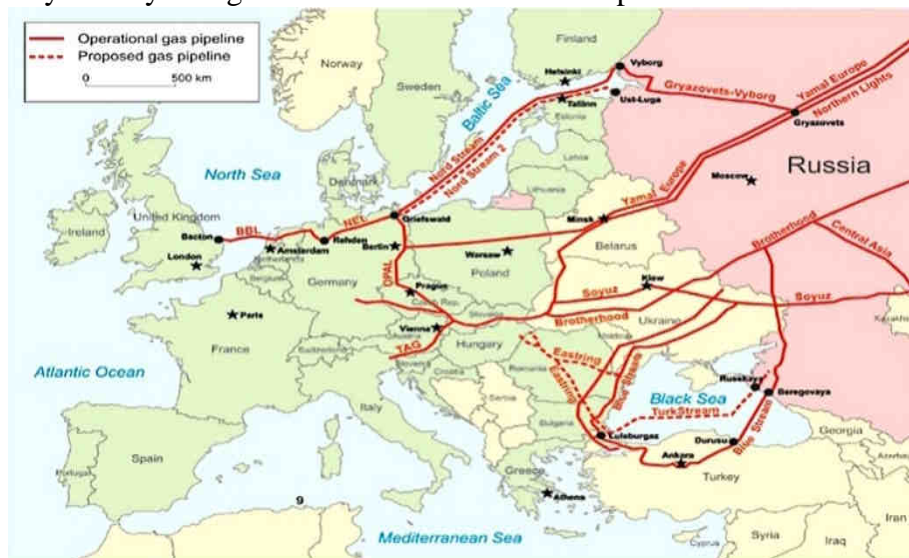
Conclusion

All of these will point in one direction – it is an undeniable necessity that European Union needs to establish a strategic energy partnership with Turkey. How that is a realistic prediction may be shown by mentioning that European Union has already been Turkey's largest trading partner.

The Black Sea region has the potential to be a key transit zone for oil and a strategic transit hub for natural gas, if a tension-reducing path can be found for frequent clashes between coastal countries and global actors.

Within the framework of the Southern Gas Corridor strategy, when TANAP and TAP projects are also taken into account as well as Turk Stream which is ongoing along with the Nord Stream 2 project, the success of the EU's regional energy security or failure of this would be lie in Turkey's strategic cooperation and energy partnership. In addition to this analysis, emphasizing the dependency of EU to RF on energy and increasing pressure of US on EU to export the LNG will be noteworthy here.

So, from aforementioned analyses it would be pointed out that future energy landscape of the Black Sea Region could remain in the race between two competing visions of the EU and RF, and probably Turkey will gain the vision to be the exact partner here.



Source: Gazprom, 2019. <https://www.gazprom.com/projects/nord-stream2/>

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OPERATIONAL FORECASTING HYDRODYNAMIC PROCESSES AND POLLUTANT TRANSPORT IN THE EASTERNMOST PART OF THE BLACK SEA

by Prof.Dr.Demuri I. Demetrashvili


Abstract: The coastal and shelf zones of the seas and oceans are undergoing most great human pressure which creates a serious danger to the ecosystem of these areas. In this regard, the Black Sea is not an exception. Through the Black Sea passes an international transport corridor TRACECA (Transport corridor Europe-Caucasus-Asia) and in the coming years more intensive shipping is expected. It is obvious that in conditions of growing intensity of shipping and, accordingly, more significant anthropogenic load on the marine environment, operation of the Black Sea monitoring and forecasting system which provides forecast of main hydrophysical parameters are very relevant and important to environmental and navigation security.

Large achievement of the Black Sea operational oceanography in the XXI century is the development of the Black Sea Nowcasting/Forecasting System in the framework of some EC scientific and technical projects. Creation of such system was promoted by scientific cooperation of the Black Sea countries (Bulgaria, Georgia, Rumania, Russia, Turkey, and Ukraine). One of the parts of this system is the regional forecasting system for the easternmost part of the Black sea developed at M. Nodia Institute of Geophysics of I. Javakhishvili Tbilisi State University. The regional forecasting system consists of hydrodynamic and ecological blocks and provides 3 days' forecast of main hydrophysical fields – the current, temperature, salinity and density with 1 km spatial resolution in the easternmost part of the Black Sea (covering Georgian sector of the Black Sea and surrounding water area), but in accidental situations - also the forecast of spreading oil and other polluting substances. The hydrodynamic block of the regional forecasting system consists of a regional baroclinic model of the Black Sea dynamics which is based on a primitive system of ocean hydrothermodynamics equations and is nested in the basin-scale model of the Black Sea dynamics of Marine Hydrophysical Institute (Sevastopol). The ecological block involves 2D and 3D transport models coupled with the regional model of sea dynamics providing simulation and forecast of spreading polluting substances.

In this study the results of simulation and forecast of hydro and thermodynamic processes developed in 2019 with use of the regional model of the Black Sea dynamics are presented, which illustrate significant variability of hydrophysical fields in the easternmost part of the sea basin. Some results of simulation of propagation of oil slick spilled on the sea surface as a result of hypothetical accidents in the easternmost Black Sea basin are demonstrated.

Introduction

Contribution of the Black Sea to the social and economic state of the Black Sea countries is very important. The Black Sea has a great recreational and transportation function and is a rich source of biological and mineral resources. Interest in the Black Sea has especially increased in the last decades, one of the reasons of which is the growing pollution of the Black Sea with various anthropogenic impurities. According to estimation of many experts, the ecological condition of the Black Sea is deteriorating and the level of its pollution is gradually



increasing [1-4]. This is due to the existing anthropogenic load and specific hydrological features of the marine basin. The Black Sea is very sensitive to anthropogenic pressure, because it is a nearly enclosed basin and is connected to the world's ocean only by a narrow Istanbul Strait.

At present, the Black Sea actually plays a role of a transport corridor for transportation of oil and other products from the East to the West and in coming years more intensive transportation is expected. Through the Black Sea passes an international transport corridor TRACECA (Transport corridor Europe-Caucasus-Asia) and in the coming years more intensive shipping is expected. It is obvious that this fact creates a serious danger to the sea environment. Therefore, ecological safety of coastal/shelf domains undergoing more anthropogenic loading has a great importance. In this regard, the Georgian coastal zone is not an exception. In the next years, more intensive transportation is expected after the start of the functioning the Anaklia deep sea port, whose construction is being planned in the near future.

It's clear that under the conditions of increasing maritime traffic and the anthropogenic pressure on the marine environment, the operation of the Black Sea monitoring/forecasting system that provides forecast of the main parameters and describes the status of Black Sea, is very important to environmental and navigational safety.

Large scientific/technical achievement of the Black Sea operational oceanography for this century is the development of the Black Sea Nowcasting/Forecasting System allowing to carry out continuous control over a current state of the Black Sea and its change for some days forward. Creation of such system was promoted by scientific cooperation of the Black Sea countries (Bulgaria, Georgia, Rumania, Russia, Turkey and, Ukraine) within the EC International scientific and technical projects ARENA, ECOOP, ASCABOS [5-8]. One of the parts of this system is the easternmost Black Sea regional forecasting system, which is developed at M. Nodia Institute of Geophysics of I. Javakhishvili Tbilisi State University. This system provides 3 days' forecast of main hydrophysical fields – the current, temperature, salinity and density with 1 km spatial resolution in the easternmost part of the Black Sea, also the forecast of propagation of oil and other polluting substances in accidental situations [9-16].

An analysis of the material accumulated for 2010-2019 as a result of the functioning the regional forecasting system shows that the easternmost water area of the Black Sea is a dynamically very active region, where formation of different circulating processes accompanying with generation, deformation and disappearance of the cyclonic and anticyclonic mesoscale and submesoscale vortex formations continuously take place.

The present paper aims at illustrating some examples of modeling and forecast of dynamic fields with focusing on processes developed in 2019 and oil pollution dispersion processes in the easternmost part of the Black Sea made on the basis of the regional forecasting system.

Materials and methods

The basis for investigation of regional hydrophysical and transport processes in the easternmost part of the Black Sea is a modelling system consisting of the high-resolution regional model of the Black Sea dynamics of Institute of Geophysics (RM-IG) of I. Javakhishvili Tbilisi State University and coupled with it 2D and 3D transport models of non-conservative impurity. Outputs of the modelling system predicting up to 72 hours are: 3D fields of the current, temperature, salinity and density, pollution zones and concentrations of polluting substances getting into the sea environment from the different sources.

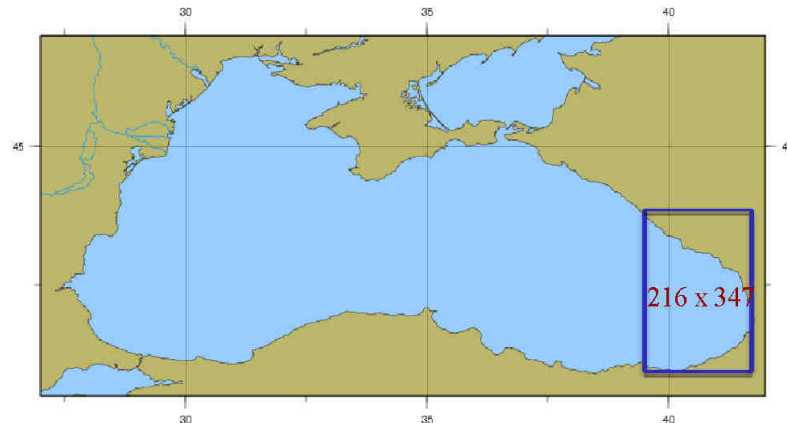


Fig. 1. Modeling and forecasting area in the easternmost part of the Black Sea. This area is marked with rectangular, numbers show amount of calculated grid points on horizons.

The coupled modelling system is the core of the Black Sea regional forecasting system for the easternmost water area, which covers the Georgian sector of the Black Sea and surrounding water area limited from the open part of the basin by the liquid boundary passing along the meridian 39.08E. In Fig.1 the modeling and forecasting regional area is shown.

The regional forecasting system is one of the components of the Black Sea basin-scale Nowcasting/Forecasting System. The methodology of functioning of the regional forecasting system is described in detail in [9, 10, 13]. The RM-IG with 1 km spatial resolution is nested in the basin-scale model of Marine Hydrophysical Institute (MHI, Sevastopol) with 5 km spatial resolution [17, 18]. There is applying one-way nesting which provides forcing of basin-scale processes on the regional processes via the open boundary. The RM-IG is based on a primitive equation system of ocean hydrothermodynamics in z-coordinates and takes into account:

- nonstationary atmospheric forcing,
- sea bottom relief and configuration of the sea basin,
- absorption of solar radiation by the sea upper layer,
- space-temporal variability of horizontal and vertical turbulent exchange,
- runoff of main rivers of Georgia,
- impact of basin-scale processes on regional processes.

All input data needed for calculation of 3-days' forecast of hydrophysical fields – the current, temperature and salinity with one hour time step frequency corresponding to 3 days forecasting time period are provided from MHI in the near-operational mode via Internet. These data are following:

- 3D fields of temperature, salinity, and sea current velocity components at initial moment $t = 0$;
- wind stress components, heat fluxes, evaporation and precipitation on the sea surface providing atmospheric forcing on hydrophysical processes;
- the temperature, salinity, and sea current velocity components on the liquid boundary, which are forecasted values by the basin-scale model of the Black Sea dynamics of MHI.

These data provide initial and boundary conditions for the model equation system.

The 2D and 3D transport models are based on solution of advection-diffusion equations for non-conservative impurity [13, 14]. These models coupled with the RM-IG use nonstationary sea current fields predicted by the RM-IG. The 3D transport model uses also the temperature and salinity fields derived from the RM-IG [13]. The 3D transport model describes changeability of pollutant's concentrations due to the following factors:

- hydrodynamic – the advection and turbulent diffusion,
- physical and biochemical transformation of polluting substances,
- gravitational sedimentation,
- stationary or nonstationary pollution sources.

The finite-difference schemes based on a two-cycle splitting method are used for solving equations of numerical models involved in the regional forecasting system [19-21]. This method substantially simplifies the implementation of complex mathematical models and enables us to reduce solution of nonstationary problem to solution of more simple 2D and 1D problems.

The software of the regional forecasting system is a integrated software package developed in the algorithm language "Fortran". The software package consists of separate modules that have certain functional loads. With the purpose of simulating and forecasting pollution zones and concentrations of polluting substances, it is required to input in the calculated program the following parameters: coordinates of source location, amount of emission, duration of emission and the parameter describing the change of pollution concentrations due to physical and biochemical factors depending on the type of polluting substance.

Results and Discussion

The above described numerical models are realized for the regional easternmost water area using a grid having on horizons 215x347 points with step equal 1 km. On a vertical the non-uniform grid with 30 calculated levels on depths: 2, 4, 6, 8, 12, 16, 26, 36, 56, 86, 136, 206, 306,.....,2006 m are considered. The time step is equal to 0.5 h. The Coriolis parameter $l = l_0 + \beta \cdot y$, where $l_0 = 0.95 \cdot 10^{-4} \text{ s}^{-1}$, $\beta = 10^{-13} \text{ cm}^{-1} \text{ s}^{-1}$.

With the purpose of validating the regional forecasting system, the forecast results were compared with observational data available to us. Forecasted sea surface temperature (SST) fields were compared with satellite SST derived from NOAA satellites [9,14-16] and forecasted regional sea surface currents were compared with the Geostrophic currents reconstructed on the basis of satellite altimeter data [14, 16].

These comparisons showed that the model realistically reproduces the main features of dynamic fields. To illustrate, there is a Fig.2 taken from [16], which indicates a good agreement between forecasted surface current with the reconstructed Geostrophic current using satellite altimeter data for - August 26, 2018.

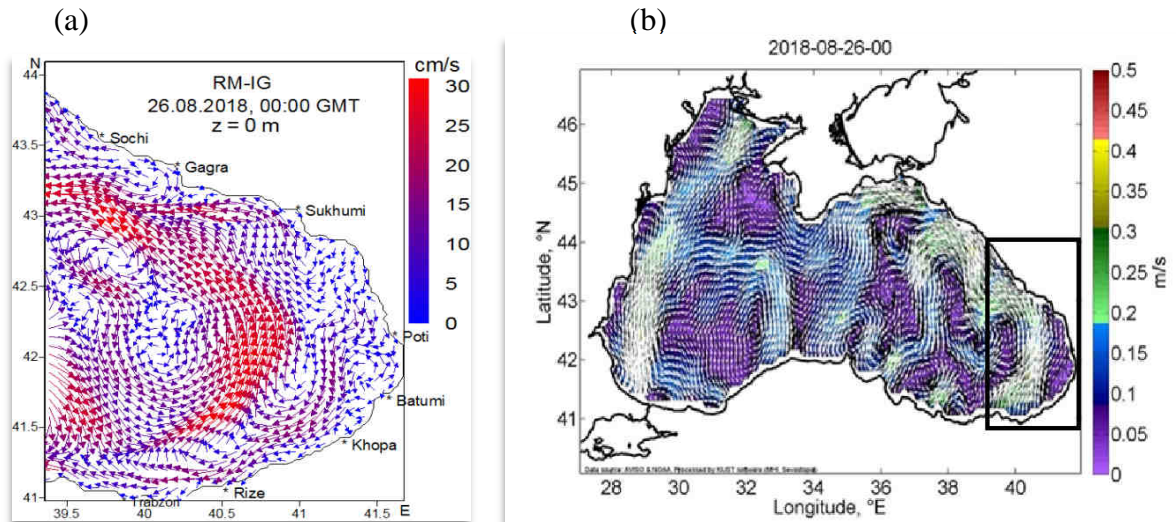


Fig.2. The surface current predicted by RM-IG (a) and Geostrophic surface current (b) on 26 August 2018, 00:00 GMT reconstructed with use of satellite altimetry data (<http://dvs.net.ru/mp/data/main.shtml>) [16].

From this Figure, it is visible that according to both forecasted and reconstructed sea surface flow fields for 26 August 2018, regional circulation mode in the easternmost part of the Black Sea was characterized by the narrow cyclonic jet which was the eastern branch of the Black Sea Rim Current jet.

Our numerical experiments also showed that high resolution of numerical model is an essential factor for identifying the coastal submesoscale eddy formations with 5-20 km diameter. According to our data, such small eddy formations with the lifetime about 1-3 days often occur in a narrow zone along the Georgian coast. It should be noticed that the existence of such eddies near the Caucasus coast is proved by hydrological studies performed in Gelendjic area (Russian zone) [22]. Submesoscale eddies are also identified in other coastal areas of the Black Sea [23, 24].

The results of the analysis of the simulated and forecasted current and thermohaline fields accumulated by us over the last decade as a result of operation of the regional forecasting system show that the easternmost part of the Black Sea is dynamically very active region, where mesoscale and submesoscale vortex formations with cyclonic and anticyclonic rotations continuously form during the year [11, 12, 15]. Such eddies are an important factor in horizontal and vertical water exchange and make an important contribution to the formation of thermohaline fields. The variability of the temperature and salinity fields in the upper layer is a process that affects the ecosystem and its productivity;-many marine living organisms are very sensitive to such fields [25-26]. In addition, the distribution and transformation of various polluting substances in the coastal zone is significantly dependent on the vortex structure of the regional circulation.

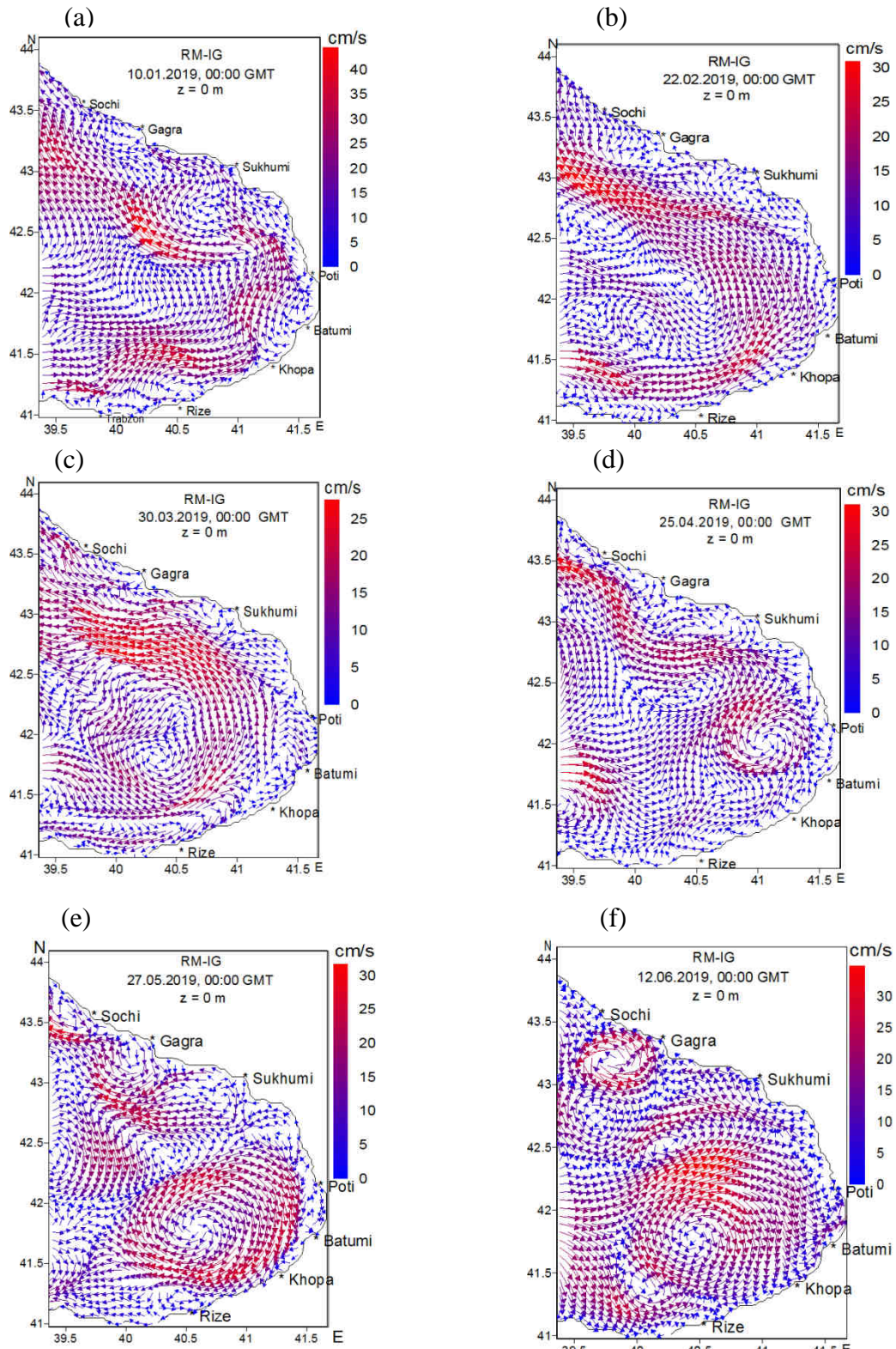



Fig.3. Predicted circulation patterns on the sea surface in the easternmost part of the Black Sea in 2019. (a) – 10 January, (b) – 22 February, (c) – 30 March, (d) – 25 April, (e) – 27 May, (f) – 12 June.

Fig.3 illustrates the seasonal and monthly variability of the surface circulation regime in the easternmost part of the Black Sea in winter, spring and at the beginning of summer in 2019. From this Figure, it is well visible that the regional circulation mode for 2019 is characterized



with strong seasonal variability of circulation processes. The regional circulation processes in the cold (January, February, March) and warm (April, May, June) periods are in the certain degree different. The circulation regime of the Black Sea is formed under the combined influence of various factors (the sea bottom relief, baroclinicity, discharges of the rivers, *etc.*), but among them, atmospheric forcing is the most important factor. The variability of meteorological processes provides variability of hydrophysical processes. From Fig. 3a-c it is well visible that in the cold season the regional circulation had generally cyclonic character but against the background of such a movement certain anticyclonic eddies also were observed. More intensive anticyclonic eddy was observed on 10 January (Fig.3a) with diameter approximately 30-35 km near the Sukhumi water area. There were also observed the anticyclonic eddies with much less sizes on 22 February near Sukhumi seashore and in the south-west part of the considered regional area (Fig.3b). The cyclonic eddy with diameter about 10-15 km was formed in the south part of the regional area on 30 March (Fig. 3c).

Since April, there is a tendency to change the character of the circulation mode and the anticyclonic movement gradually begins to dominate (Fig.3d). This month, an anticyclonic eddy near Poti water area with a diameter of approximately 40 km, which is apparently the initial stage of the well known Batumi anticyclonic eddy, begins to be generated. From Fig.3 it is visible that in the subsequent period, this eddy becomes more intensive formation and occupies more territory. On June 12, 2019 it covered a territory with diameter about 80-100 km (Fig. 3f). The Batumi eddy is generally the most intensive vortex formation in the easternmost water area in the warm season [9, 10, 27, 28]. The analysis of the calculated fields shows that the Batumi anticyclonic eddy in different years is expressed by different intensity and reaches its maximum intensity in different months. During the last decade, the Batumi eddy was the most stable formation in 2010, and it covered practically all easternmost part of the basin during summer season and at the beginning of the autumn [9, 10]. It is interesting to note that the summer of 2010 on the territory of Georgia, as well as on a large part of the European territory, was characterized by an abnormally hot summer. The air temperature frequently reached and exceeded 40⁰C, and Georgian coastal waters were heated up more than 30⁰C. The anomalous temperature regime obviously influenced the mode of evaporation and precipitation as well and modified thermohaline conditions of the sea in 2010, apparently, provided the strong stability and intensity of the Batumi eddy in 2010. This fact leads us to the idea that one of the main reasons for the formation of the Batumi eddy is the specific thermohaline conditions of the sea basin.

In addition to the Batumi anticyclone in May and June, the circulation regime was also characterized by the formation of other small cyclonic and anticyclonic formations. Among such vortices, a clearly pronounced cyclonic vortex formation in the waters between Sochi and Gagra in June 2019 should be noted (Fig. 3f).

Our numerical experiments show that the circulation regime has a strong influence on the formation of a salinity field, which is an important factor for marine organisms. In Fig.4 the predicted salinity fields in winter (10 January) and summer (12 June) 2019 are shown on the depth of 20 m. From this Figure it is clear that the salinity regime is different in winter and summer seasons and is in a good correlation with the circulation mode. Comparison of Figs.4a and 4b with Figs.3a and 3f shows that waters with low salinity correspond to anticyclonic eddies and waters with relatively high salinity-to areas of cyclonic rotation. The downward flows in the central part of the anticyclonic eddy transfer less salty waters from the upper layers

downwards. The upward flows in the center of the cyclonic eddy promote more salty waters being carried from deep layers in the upper payers.

Sea surface temperature (SST) is one of the most important hydrophysical parameter which influences the heat exchange between ocean and atmosphere. In addition, the variability of the temperature regime in the upper layer of the Sea affects the sea ecosystem and its productivity. In Fig. 5, predicted SST fields for 10 January and 12 June 2019 are shown. The temperature field undergoes both significant and qualitative seasonal changes and the character of its change in the surface layer is basically defined by heat exchange between the sea and atmosphere. From Fig. 5 it is visible that both in winter and summer more warm waters are observed at the Georgian coast and more cold waters – in the south-west part of the regional area. In particular, on January 10, the maximum temperature about 11.9°C was observed near the coast between Sukhumi and Poti and on June 12, the maximum temperature about 28°C was at the same place. There is a significant qualitative difference in the horizontal temperature distribution. During the cold season, significant spatial changes in temperature field are observed in the latitudinal direction, but during the warm season - in the meridian direction.

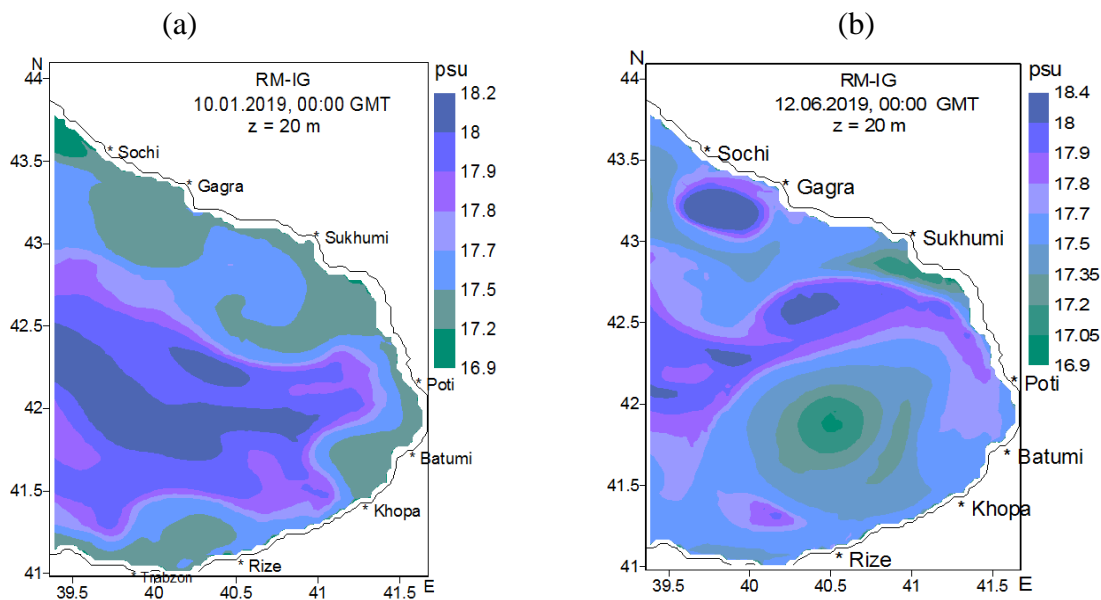


Fig.4. Predicted salinity fields on the depth of 20 m in the easternmost part of the Black Sea in 2019. (a) – 10 January, (b) – 12 June.

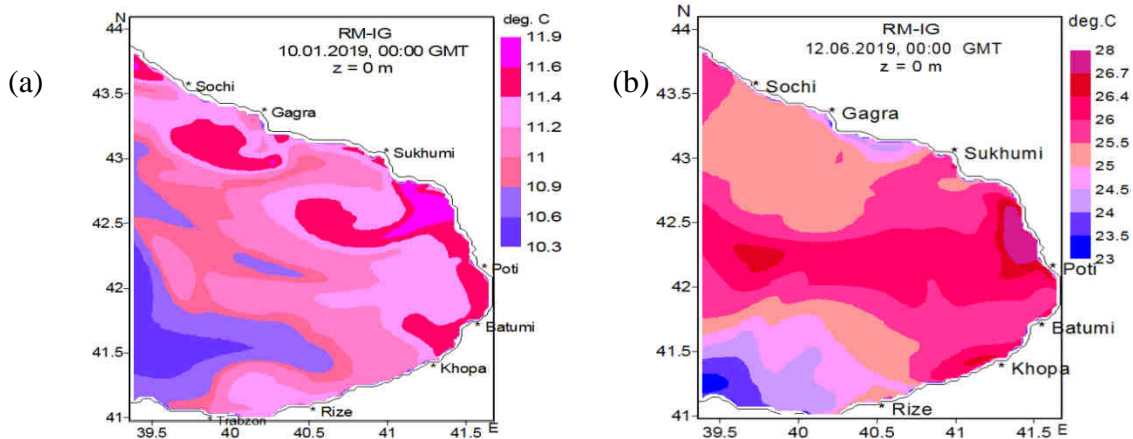


Fig.5. Predicted SST fields in the easternmost part of the Black Sea in 2019.
 (a) – 10 January, (b) – 12 June.

Numerical experiments carried out in case of different location of hypothetical sources at real circulating modes show significant role of hydrodynamic processes (the current, turbulence) in formation of spatial-temporal distribution of pollution concentrations [13, 29]. In [13] 3D spreading of conditional impurity was simulated, which has been discharged into the sea from the rivers Rioni and Chorokhi. The impurity was distributed not only in a horizontal direction, but also in a vertically due to the vertical diffusion and vertical component of the sea velocity.

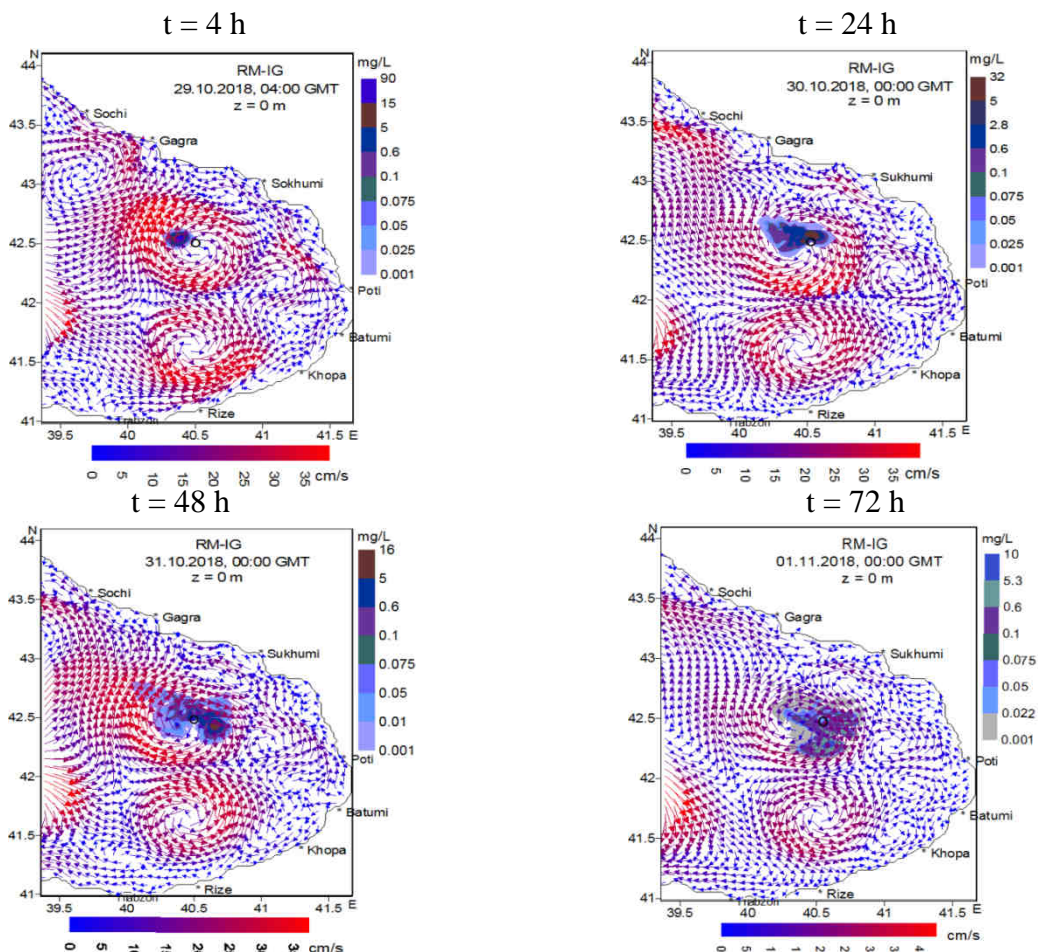


Fig.6. Predicted surface current and oil slick transport in the indicated moments of time after the hypothetical accidental spill in the point with grid coordinates $108\Delta x, 173\Delta y$. Forecasting interval: 00:00 GMT, 29 October-1 November 2018. Source location is indicated by a circle.

In this paper we illustrated applying of 2D version of the transport model to simulate oil spill migration on the Black Sea surface in case of hypothetical accidents. The hypothetical pollution source was considered as a point source and the diffusion coefficient was calculated by the formula [30].

$$\mu = \gamma \Delta x \Delta y \sqrt{2 \left(\frac{\partial u}{\partial x} \right)^2 + \left(\frac{\partial u}{\partial y} + \frac{\partial v}{\partial x} \right)^2 + 2 \left(\frac{\partial v}{\partial y} \right)^2},$$

where Δx and Δy are grid steps along x and y coordinate axis, γ is some coefficient, u and v are the sea velocity components along x and y axis. It was assumed that the concentrations decrease twice within 12 hours after the oil spill, which corresponds to the well-known fact that on the first day after the oil spill, evaporation is a very important factor in reducing the concentration of oil [31]. Taking into account the fact that admissible concentration limit usually makes up 0.05 mg/L, all concentrations less than 0.001 mg/L had been taken as equal to 0.

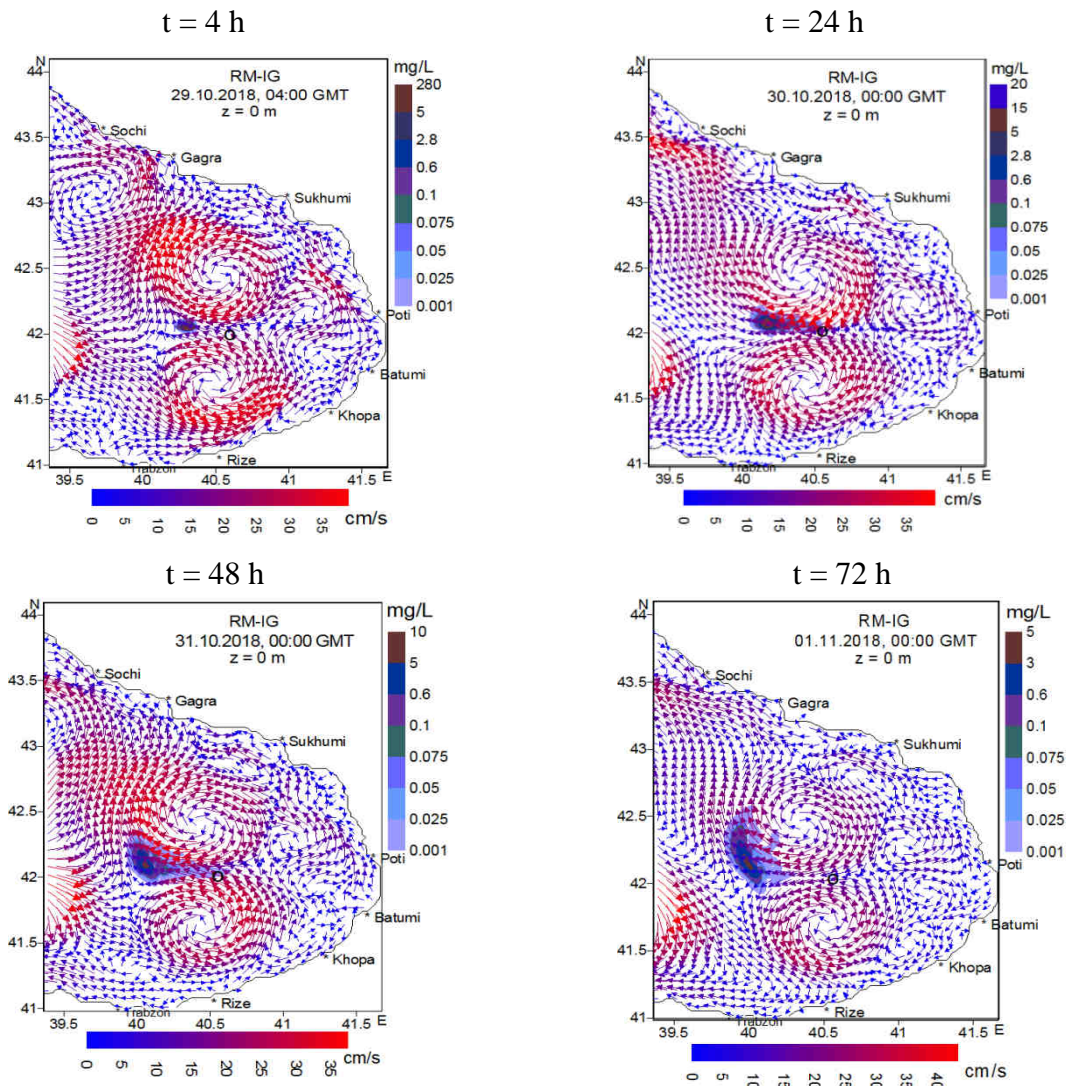


Fig. 7. Predicted surface current and oil slick transport in the indicated moments of time after the hypothetical accidental spill in the point with grid coordinates $103\Delta x$, $120\Delta y$. Forecasting interval: 00:00 GMT, 29 October-1 November 2018. Source location is indicated by a circle.

Figs. 6 and 7 illustrate predicted regional surface circulation and drifting oil slick on the sea surface in the easternmost Black Sea basin, during the forecasting interval: 00:00GMT, 29 October – 1 November 2018. From these Figures it is clear that, during the forecasting period, the main structural element of the regional circulation is the dipole vortex formation “cyclone-anticyclone “. Each of these vortices has an average diameter of approximately 70–80 km, it undergoes certain changes, but, in general, the dipole structure remains stable formation. There are also some eddies with less sizes. Among such eddies, a cyclonic eddy with diameter about 15-20 km in the north-west part of the regional area, was observed on August 9 (Fig. 6a) and then was disintegrated. Another eddy formations with less sizes on the right side from the dipole structure were also observed.

It was assumed that as a result of an accident, 10 tons of oil were spilled at the sea within 4 hours. In the first case the spill point with grid coordinates $108\Delta x$, $173\Delta y$ was located near the central area of the anticyclonic eddy formed in the considered area (Fig. 6). In the second one (Fig.7), the same amount of oil was spilled in the point with the coordinates $103\Delta x$, $120\Delta y$. This pollution source was located approximately in the area between anticyclonic and cyclonic eddies within the dipole structure.

From Figs. 6 and 7, it is visible that in both cases in the process of migration, the oil slick deforms - changes shape, expands and occupies more territory due to hydrodynamic factors – the flow and turbulence. At the same time, the pollution concentrations decrease due to the diffusion expansion of the slick and some physical and biochemical factors (evaporation, emulsification, *etc.*) that are taken into account indirectly in the mathematical model by a special parameter of non-conservation [29]. The features of oil slick migration are different in these two numerical experiments. In the first numerical experiment (Fig. 6), the oil slick migrates within three days inside the anticyclonic vortex without leaving the area of this vortex. In the second one, the oil slick moves to the west and then it is captured by the peripheral current of the anticyclonic eddy. Thus, the behavior of oil spill under given circulating conditions depends largely on the location of the oil spill.

Conclusion and Perspectives

During the last decade, M. Nodia Institute of Geophysics of I. Javakhishvili Tbilisi State University has developed the Black Sea Regional Operational Forecasting System as a subsystem of the Black Sea Basin-Scale Operational Nowcasting/Forecasting System. Numerical experiments presented in this paper have been carried out on the basis of the Black Sea Regional Forecasting System which operates in the near-real operative mode for the easternmost part of the Black Sea and provides 3 days forecast of dynamic fields – the current, temperature, salinity, density and pollution zones and concentrations of polluting substances in accidental situations. A core of the regional system – the numerical regional model of the Black Sea dynamics is nested in the basin-scale model of the Black Sea dynamics of MHI. The atmospheric forcing on the sea surface is specified by the high-resolution (horizontal grid step 25 km) regional atmospheric model based on SCIRON forecasting system of Atmospheric Modelling and Weather Forecasting Group of University of Athens (<http://forecast.uoa.gr/>).

With the purpose of illustrating the functioning of the regional forecasting system, some results of forecasting hydrophysical fields in 2019 and oil slick transport (emitted from hypothetical sources) are presented which show that dynamical processes developing in the Georgian coastal zone and surrounding area are characterized by sufficient variability, which significantly influence the features of spatial-temporal distribution of pollution concentrations. The results presented in this paper illustrate seasonal variability of the hydrodynamic processes in 2019. Since April, the Batumi anticyclonic eddy is generated, which becomes more intense eddy formation at the beginning summer season.

In the foreseeable future, the inclusion of the forecast model of wind surface waves in the forecast system is planned, which will significantly increase the practical value of the forecasting system and expand the number of those national economic areas and organizations whose activities are related to the sea and need operational information about the sea state.

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CHEMICAL AND BIOLOGICAL POLLUTION OF THE BLACK SEA

by Prof.Dr.Gülşen ALTUĞ

The Black Sea is under the influences of chemical and biological pollution from terrestrial sources and maritime transport. The sea has an important economically power related to fishing industry. All the Black Sea riparian countries related to the "Convention on the Protection of the Black Sea against Pollution" have been combating pollution sources with an aim to sustainable uses of marine resources. It is known that sustainable management of human development is an important part of the safety and healthy ecosystems. Nowadays there are new approaches in marine studies such as using biodiversity-oriented data and using the characteristics of microbial communities to make definitions for ecosystem functioning. The anoxic system of the Black Sea offers a good model system for observing how microbial communities are structured in the transition between oxic and anoxic environments. Regarding new approaches used for understanding ecosystem functions, the Black Sea also offers an opportunity to detect ecosystem problems with respect to microbiological communities of the stratified water column that have been shaped by biological and chemical polluters of domestic and industrial inputs controlled by all neighboring regions. In the age of the 4th industrial revolution, approaches to economic and environmental issues show the relevance of regional security to scientific developments. Marine Biotechnology, which is a component of Marine 4.0 under the name Industry 4.0, offers us five different areas; energy, food, industry, environment and health. All of these titles describe environmentally friendly, economic and healthy products that will be developed using new generation methods. In addition, blue growth, maritime transport, and aquaculture, marine mining and marine and coastal tourism is positioned under the name of marine 4.0. The countries in the Black Sea basin have the common resources of this regional sea. Prevention of pollution, especially in the coastal regions of each country, is important for the welfare and safety of sustainable use of marine areas. Pollution from ship's ballast waters is another important issue to be addressed for the region. Data on the Black Sea oceanography and pollution presented at this meeting made significant contributions for regional cooperation. However, evaluating the prominent working topics in future meetings will contribute to the strengthening of the cooperation between the countries and the healthy and safe future of the Black Sea.

OCEANOGRAPHY OF THE BLACK SEA

by Prof.Dr.Şükrü Turan Beşiktepe

Abstract

In this paper, the basic oceanographic features of the Black Sea and their spatial and temporal variabilities reviewed based on the knowledge produced from international programmes carried out during 1988 and 2000. It is shown that the Black Sea is unique oceanographic environment, and understanding of this environment and solving its problems requires multi-institutional efforts and collaboration of institutes from riparian countries. Lessons learned from past collaborations show that capacity and willingness to work together in the region are existent to tackle existing environmental issues.

1. Introduction

Studies to understand the physical oceanography of the Black Sea started in the beginning of the 1900s and were carried out through the efforts in the former USSR and other riparian countries. These earlier studies allowed understanding the large scale variabilities of the hydrological properties and circulation features. The overall state of knowledge on the Black Sea physical oceanography based on these earlier studies can be found in the monographs and review papers (Filippov, 1966; Blatovet *al.*, 1984; Özsoy and Ünlüata, 1997) and references therein.

Following these earlier studies, basin-wide research cruises were carried out through the cooperation between Turkish and USSR scientists on board R/V Kolesnikov, R/V Dimitry Mendeleev and R/V Bilim. These cruises have done between 1987 and 1989.

In the beginning of the 1990s, increased international cooperation among the riparian countries allowed to carry out more systematic basin wide surveys (see Ünlüata *et al.*, 1993). These surveys conducted in the summers of 1991 (HydroBlack91, 2-29 September 1991), 1992 (CoMSBlack92, 4-26 July 1992), and 1993 (CoMSBlack93, 2-15 April 1993), March 1994, May 1995, April 1996. During these cruises, basic physical (T, S, u, v), chemical (nutrients) and biological (chlorophyll-a, phytoplankton and zooplankton) data were collected on the station grid with a nominal spacing of about 20 km. The station network of the first three surveys were covering the entire Black Sea while the rest of the surveys were covering the western half of the basin. The basin-wide surveys, HydroBlack91 and CoMSBlack92, were completed by several ships in about one month. These collaborations were started within the context of the NATO TU-Fisheries programme and then continued through the CoMSBlack international programme, NATO-TU Black Sea project and NATO-ODBMS project respectively. In this paper, I will present general overview of the Black Sea oceanography based on outcomes of these international programmes and show how international collaborations advance our understanding of the Black Sea oceanographic processes.

2. Black Sea Oceanographic Data Base

One of the major outcomes of these collaborations in the region was creation of the oceanographic data base which is called Black Sea Oceanographic Data Base (BSODB). BSODB was created in the framework of the NATO TU-Black Sea project between 1994 and 1997 (Vladimirov *et al.*, 1999) later maintained in the framework of the NATO SFP ODBMS Black Sea Projects (1998-2003) and finally updated and extended with support from NATO Linkage Grant ENVIR.LG 980494 “interdisciplinary Black Sea database on a basis of recent international projects/cruises (2003-2005). All the major institutions from all riparian countries and institutions outside the region which were holding Black Sea oceanographic data contributed to this data base. It includes all main physical, chemical and biological variables for the entire Black Sea basin and serves as a base line for contemporary and future research activities and management purposes in the region. Spatial distribution of all data is shown in Figure 1. The materials presented here are based on this data base.

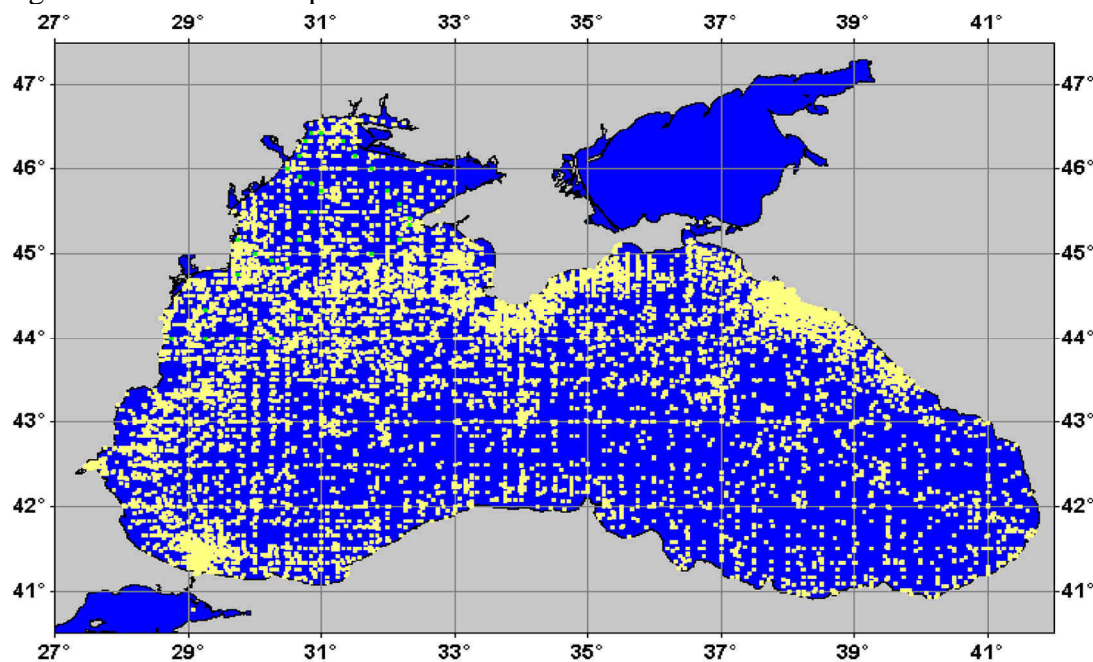


Figure 1. Locations of the stations in the Black Sea Oceanographic Data Base.

3. Surface circulation

Hydrographic measurements done in late 80s and compilation of the previous knowledge on the Black Sea from earlier studies lead to obtain schematic of the upper layer circulation of the Black Sea (Figure 2). Figure 2 shows a cartoon of the Black Sea circulation after Oğuzet *et al.*, 1992.

The mean circulation of the Black Sea is characterized by the cyclonic rim current with gyres and large mesoscale eddies occupying the interior of the basin. The deep basin circulation includes cyclonic eddies embedded in a large cyclonic central circulation. In the periphery of the central circulation, a complex of anticyclonic eddies is linked, most of the time, by a meandering and highly variable current moving counter-clockwise around the basin: The Rim Current.

The well-defined rim current has a typical width of 50 km flows over the continental slope and the margin topography with a mean core speed of 30 cm/s with considerable horizontal shear in the cross-stream direction (Oğuz and Beşiktepe, 1996). The mesoscale variability of the current system is very pronounced, particularly around the periphery of the basin where the rim current often becomes baroclinically unstable as observed by remote sensing and in situ observations. The mesoscale eddies, offshore jets and meanders of the Rim Current play crucial roles for onshore-offshore transports between the coastal waters and interior (Sur *et al.*, 1994).

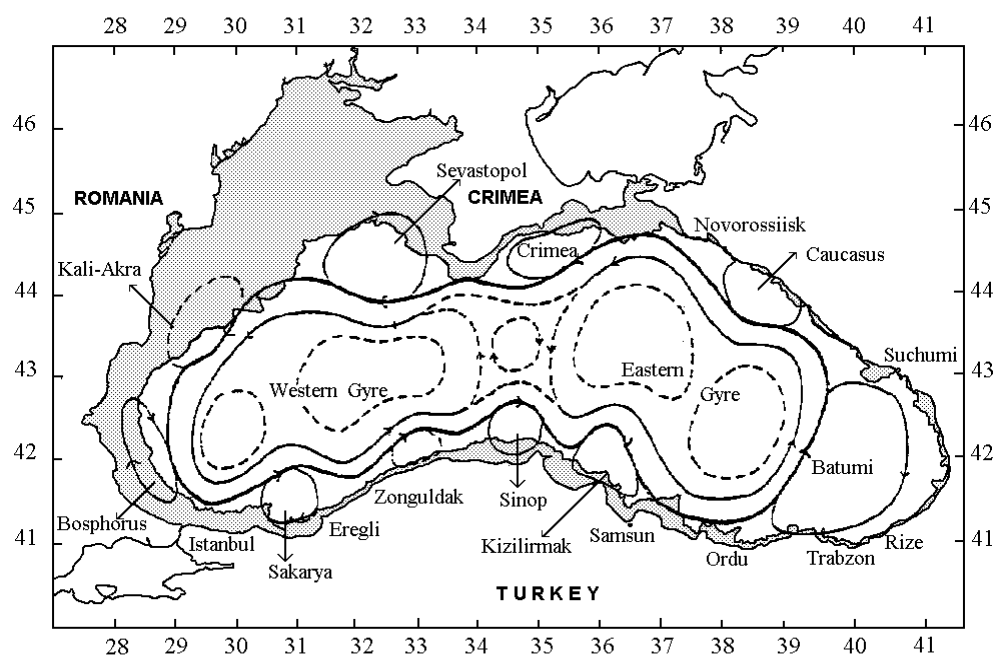


Figure 2. Schematic of the Black Sea circulation (after Oguz *et al.*, 1993)

CoMSBlack92 data consist of 313 CTD profiles on an almost regular grid with 30 km spacing (Figure 3). Although majority of the stations were visited between 7 and 26 July, the survey was carried out between July 4 and August 2, 1992. The CTD casts sampled the water to a nominal depth of 500 m, except for 16 deep CTD casts (1500 m) used for intercalibration. The intercalibrations were done utilizing deep CTD data from the same station visited by each ship. The pooled data set consists of vertical profiles of temperature, salinity with 1 m vertical resolution at each station. The final data set is accurate to about 0.005°C in temperature and 0.005 ppt in salinity.

JULY 1992 (ComsBlack'92a) Station Network

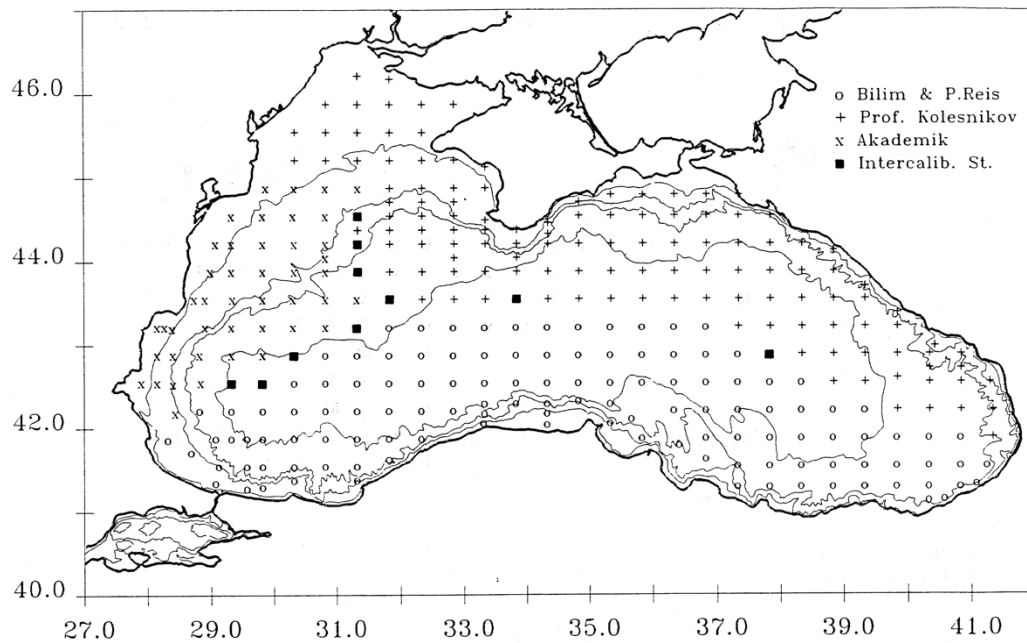


Figure 3. Station locations for CoMSBlack'92a.

Distribution of the temperature and salinities at surface obtained during CoMSBlack92 are given in Figure 4. The geostrophic velocities calculated using density measurements are overlapped on salinity map. The north-western shelf region is relatively shallow and there is a region of fresh water influence near the coast, where 80% of the river outflows into the basin occur. The brackish coastal water has the lowest salinities of about 14 ppt on the western boundary near the rivers with the larger outflows. Salinity of 18 ppt is considered as a boundary between coastal and interior waters during the summer. The surface temperatures vary between 23 and 27°C. The circulation in the interior zone of the north-western shelf is mostly wind driven and it is populated with weak eddies. The deep basin is bordered, other than to the west, by narrow shelves interrupted with canyons and extended submarine ridges. The interactions between the deep and shelf circulations are complex, strong and intermittent. Internal dynamics, stratification, and topographic variability (slope, orientation, and roughness) lead to the characteristic structure and scales of the Rim Current, the shelf circulation, and their interactions along the periphery. The observational evidence indicates that the circulation in the basin has a significant mesoscale variability ($O(10)$ km and $O(1-3)$ days).

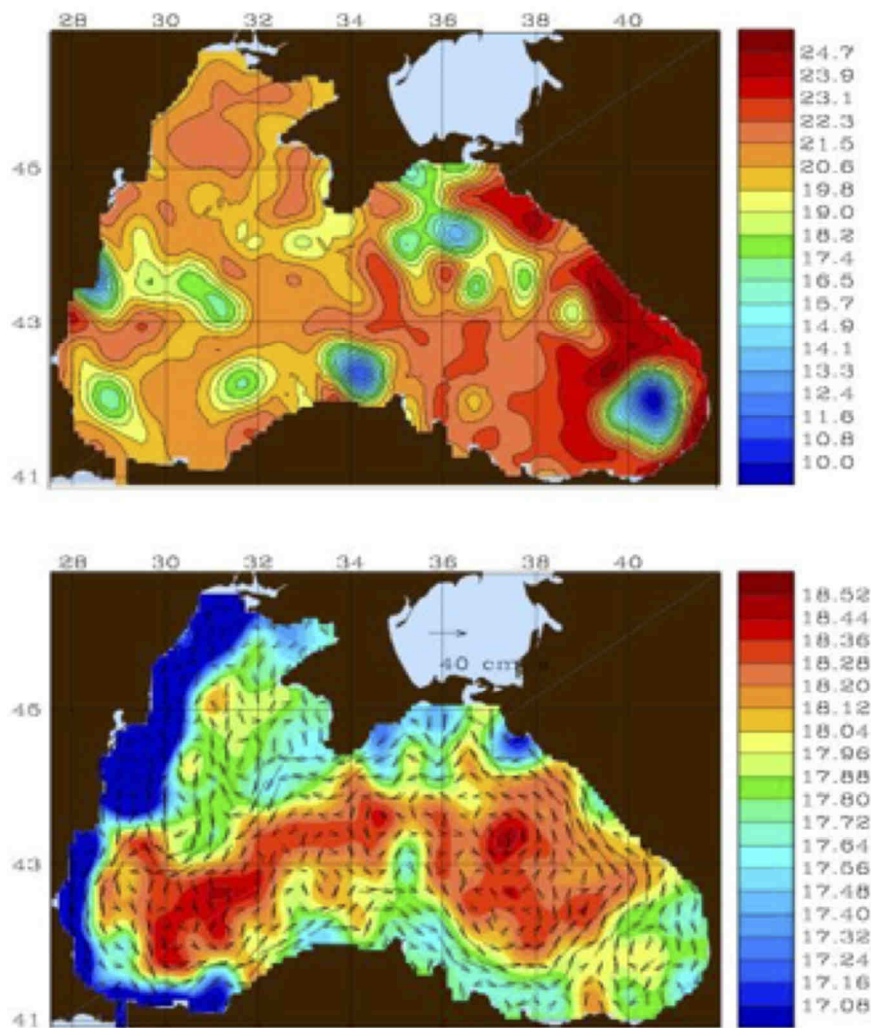


Figure 4. Distribution of temperature and salinity at the surface during July 92.

The evolution of the Black Sea temperature, salinity and circulation from large to mesoscale are studied in detail using a CoMSBlack'92 data obtained in the multi-national CoMSBlack'92 experiment; wind stress derived from analyses of the Sevastopol Hydrometeorological Office; and climatological heat and water fluxes (Beşiktepe et al., 2001). Hydrographic data gridded through objective analysis and adjusted dynamically with a primitive equation model provides a snapshot of the circulation at mesoscale resolution for mid-July 1992. A 50-day primitive equation model data driven simulation, taking into account atmospheric and riverine fluxes, is used to examine the evolution and dominant variability's and its dependencies during this summer period (Figure 5).

The Rim current, which has a typical width of 50 km, flows over the deep basin in the counter-clockwise direction, encompassing the central cyclonic region to its left, and mostly anticyclonic region to its right. The core speed fluctuates in the 30-50 cm/s range with considerable horizontal shear in the cross-stream direction and is roughly traceable by the 18 ppt isohaline in the periphery of the deep basin. As the Rim current transverses, the edge of the deep basin, the meandering and secondary circulation of the jet varies according to its interaction with the topography and shelf waters. The north-western shelf circulation is populated with (anticyclonic) eddies and a near coastal buoyancy flow of riverine origin.

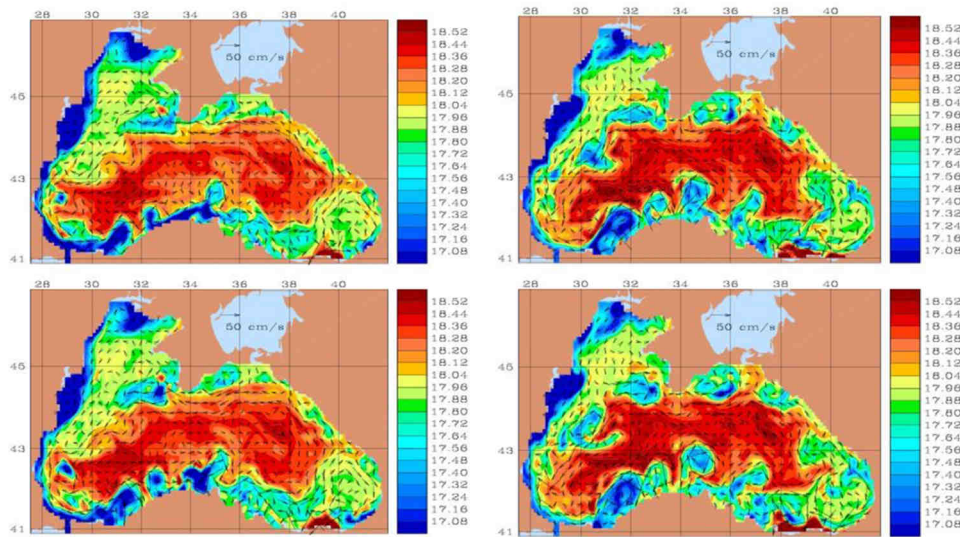


Figure 5. Model simulated velocity vectors overlapped on salinity distribution for a depth of 10 m, every 5 days between days 20 and 45.

Following these oceanographic cruises which revealed the mesoscale structure of the Black Sea waters, couple of subsequent cruises at each year were carried out by riparian countries (CoMSBlack93 (April 1993), March 1994, May 1995, April 1996). These cruises were more processes oriented and did not cover the entire basin as in the previous cruises.

For example, during CoMSBlack93, the Turkish ship R.V. Bilim acquired CTD data at a series of cross-shelf sections and monitored currents with ADCP measurements in the Turkish waters as well as within the Ukrainian and Romanian Exclusive Economic Zones (EEZ) of the NWS between 2 and 15 April 1993. The measurements were performed on a series of sections covering a major part of the north-western continental shelf and slope with some limited extension into the basin's interior. Along the southern coast, sampling was taken across several meridional sections extending approximately 100 km offshore. The station spacing along these sections was variable, changing from about 2 miles to 10 miles depending on water mass characteristics and steepness of the topographic slope. However, spacing between these sections, was generally coarser than the resolution necessary to capture the mesoscale features, especially along the Turkish coast. The hydrographic observations were made with a SeaBird SBE-9 CTD system lowered to a maximum depth of 500 m or to a few meters above the bottom over the continental shelf and upper slope. The data demonstrate quite clearly that the boundary flow system along the western and southern coast of the Black Sea possesses meanders and a series of cyclonic-anticyclonic eddy pairs associated with them (Figure 6).

The spring 1994 cruise was accomplished using one Turkish ship (R/V Bilim) and one Ukrainian ship (R/V Hidroptik) between 25 April and 15 May 1994. The station network was comprised of 248 hydrographic stations to the west of 36° E. The sampling grid was designed to have a high-resolution sampling across the shelf and acceptable resolution alongshore.

The well-defined Black Sea rim current flows over the continental slope with a mean velocity of 30 cm/s. The Rim current, with a typical width of 50 km, processes horizontal shear in the cross-stream direction. The current velocities could reach up to 1 m/s at the core of the rim current and the semi-permanent anti-cyclonic eddies are visible. The total transports

(integrated vertically and horizontally) for the rim current are about 1.5 Sv - 2.5 Sv ($1\text{Sv}=10^6\text{ m}^3\text{s}^{-1}$).

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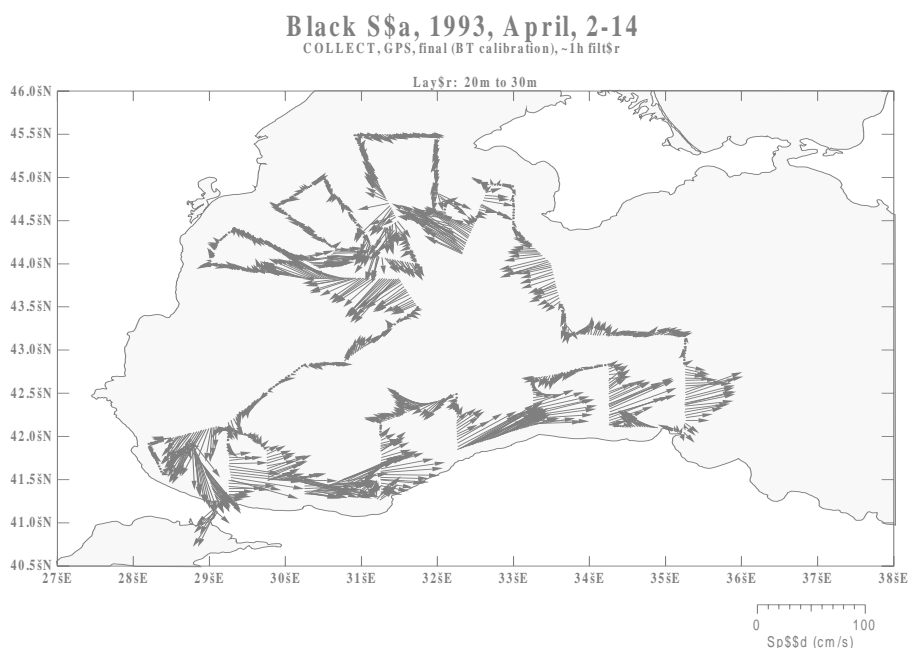


Figure 6. Surface currents measured during CoMSBlack'93 using shipboard acoustic doppler current meter.

4. Sub-surface and deep-water characteristics

USA-Turkish cooperation during the cruise of the R/V Knorr in 1998 increased our knowledge on the vertical structure of the water column physical and chemical variabilities. The high resolution in the vertical sampling of physical and chemical variables showed that the depth of the anoxic interface is stable for decades (Tugrulet *et al.*, 1992). The vertical temperature and salinity profiles obtained during 1998 Knorr cruise showed that the physical properties of the deep waters of the Black Sea below 500m are stagnant except near the boundaries, where local processes produce fine structures (Özsoy *et al.*, 1991, Özsoy and Beşiktepe, 1995). Below 1700m, a bottom convection layer with about 400m thickness exists. The temperature and salinity in the layer display very small spatial and temporal variability.

In order to describe the vertical structure of the physical properties of the water masses in the Black Sea, the temperature, salinity and density (σ - θ) transects along the east-west axis of the Black Sea near Turkish coast is presented in Figure 7.

The seasonal thermocline is strengthened during this period and a zonal large-scale temperature gradient is supported by the observed relatively weak/strong winds/net heat fluxes in the east with respect to west. The layers with potential density $\sigma_{\theta} < 13.5\text{ kg/m}^3$ are partially in contact with the atmosphere. This indicates that the atmospheric ventilation of the Black Sea waters is limited to upper 50 meters in this period.

The minimum temperature in the water column occurs in deep waters around 50 m, whereas in the basin boundaries the minimum is generally deeper (100 m). A distinguishing feature of the upper layer stratification is the Cold Intermediate Layer (CIL), identified with

waters less than 8 °C immediately below the seasonal thermocline. It is formed during the winter with cooling of the surface water masses which leads to vertical convective overturning with subsequent homogenization of the uppermost 50 m of the water column. The temperature and density of the Cold Intermediate Water (CIW) during the winter formation period are around 5-6 °C and 14.6-14.8 kg/m³, respectively.

This layer is observed as a subsurface temperature minimum during spring through autumn and temperature of 8°C is considered as both an upper and a lower boundary of the CIL. The CIL forms in the north-western shelf (Blatovet *et al.*, 1984) and over the dome of the cyclone at the central part of the basin in winter and spreads over the basin during spring and summer (Ovchinnikov and Popov, 1987). Below the CIL, the main halocline/pycnocline separates the deep waters of the density sigma-t; 17 kg/m³ from the shallower upper layer waters of sigma-t; 11 kg/m³. The temperature and salinity distribution below the pycnocline increase slightly with depth. The pycnocline is also the boundary between oxic and anoxic waters of the Black Sea.

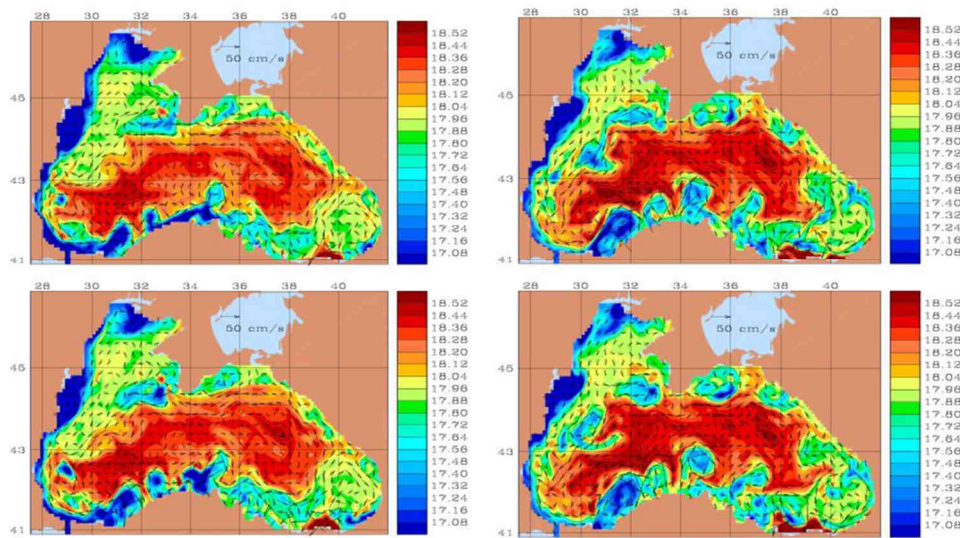


Figure 7. Temperature, salinity and density (sigma-theta) transect across the Black Sea main axis. Location of the transect is shown in the map.

The presence of a strong shallow pycnocline restricts the ventilation of the deeper layers of the Black Sea and deeper convection. Hence ventilation of the Black Sea due to winter convection is limited to upper layers. The only means of the renewal of the deep waters is the inflow from the İstanbul Strait. This inflow is very limited, and the incoming oxygen could not compensate the consumed oxygen within the basin. This unbalanced oxygen flux results in the formation of the anoxic layer in the Black Sea and the sulphide exists below 100 m approximately. The upper depth of the anoxic layer varies spatially and temporarily and still is an important research issue.

Figure 8 is presented to show temporal variability of oxygen and sulfide in the Black Sea water column. This figure is produced from Knorr cruise in 2001 (Murray *et al.*, 2002) based on the study of Konovalov and Murray (2001). This figure shows that there is an upward excursion of the boundary of the oxic-anoxic zone generally after the 1970s. However, deepening of this interface occurs some years after 80s which correspond to the colder winters that occurred in 1978, 1984, 1988 and 1993. This indicates that the cold intermediate layer was

formed in deeper layer during these cold winters and resulted in better ventilation of sub-surface waters. However, as salinity is more dominant than the temperature for controlling the density in the Black Sea, it is more complicated than this explanation and subject to recent studies.

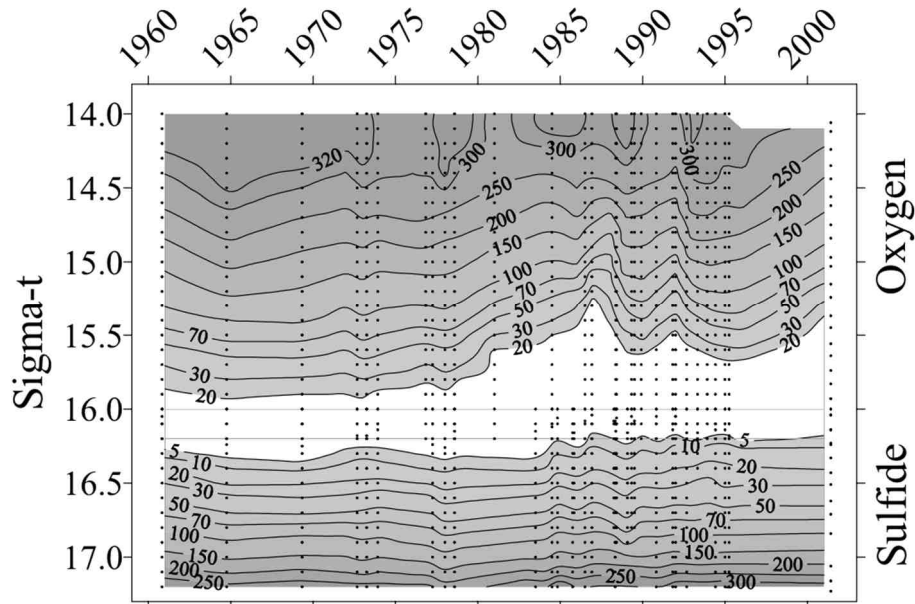



Figure 8. Temporal variability in suboxic zone thickness from 1960 to 2001. (After Murray et al., 2002)

5. Conclusions

In this paper, I presented the review of the basic oceanographic characteristics of the Black Sea based on the data collected within international programs between 1988 and 2000. Obviously, this review highlights some fundamental properties of the Black Sea and does not cover all aspects of its oceanographic features. On the other hand, I wanted to demonstrate how international collaboration could leverage the advancement of scientific knowledge in oceanography. The experience gained from these collaborations shows that corporations can provide immediate benefits in the region in solving present problems of the Black Sea environment. Capacity and culture to work together exist in the Black Sea region.

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BLACK SEA COMMISSION: FIGHTING AGAINST MARITIME POLLUTION IN THE BLACK SEA

by Iryna Makarenko

Nowadays, the Convention on the Protection of the Black Sea Against Pollution, also known as Bucharest Convention, is one of the most known Regional Sea Conventions and instruments of the International Environmental Law, which was signed and ratified in 1992 and 1994, accordingly, and provided the legal ground for combating pollution from land-based sources and maritime transport, achieving sustainable management of marine living resources and sustainable human development in the Black Sea Region. It is also the only existing legal instrument in the field of marine environment which has all the Black Sea riparian countries as signatories. There is no doubt that the activities implemented so far by the relevant Convention' bodies allowed to significantly increase the public involvement, address transboundary environmental issues and to introduce the sound environmental decision-making related to the sustainable use of the resources of the Black Sea.

Article IX of the Bucharest Convention calls for its Contracting Parties to cooperate in order to prevent, reduce and combat pollution of the marine environment of the Black Sea resulting from emergency situations in accordance with the Protocol on Cooperation in Combating Pollution of the Black Sea Marine Environment by Oil and Other Harmful Substances in Emergency Situations (The Emergency Protocol). Article 2 of the Emergency Protocol states that the Contracting Parties shall endeavour to maintain and promote, either individually or through bilateral or multilateral cooperation, contingency plans for combating pollution of the sea by oil and other harmful substances. These shall include, in particular, equipment, vessels, aircraft and manpower prepared for operations in emergency situations.

The Black Sea regional cooperation (established initially by the Bucharest Convention) to combat oil pollution at sea is based on: (1) the Black Sea Strategic Action Plan (2009), (2) the Emergency Protocol (1992, Protocol on the cooperation in combating pollution of the Black Sea environment by oil and other harmful substances in emergency situations) and (3) the Black Sea Contingency Plan (BS CP) to this Protocol (2003), not yet signed by Russia and Ukraine, but operational, as recognised by the Black Sea Commission, following already four Delta exercises (Turkey-2007, Romania-2009, Georgia-2011 and Russian Federation in 2016).

At-sea, table-top and communication exercises are undertaken on a regular basis: (a) Once a year Black Sea ALPHA: Synthetic or Table-top Exercise; (b) Tri-annually Black Sea BRAVO: Alarm or Communication Exercise; (c) Black Sea CHARLIE: Equipment Deployment Exercise; (d) BLACK SEA DELTA: Search and rescue and Oil spill preparedness exercise.

Operational procedures are in place: alarming, notification, communication and on request of a Contracting Party, mobilize resources available (Romanian stand-by vessel GSP Orion equipped by EC-EMSA and used already in RODELTA 2009 and GEODELTA 2011).

In accordance with plan, in 2018:

- ▶ Bulgaria organized BG BRAVO Exercise on 26th April, 2018;
- ▶ Georgia organized GE BRAVO Exercise on 14rd August, 2018;
- ▶ Romania organized RO BRAVO Exercise on 28th November, 2018;
- ▶ Turkey organized TRALPHA Exercise on 18th April, 2018 during 27th ESAS AG Meeting.

In 2019:

- ▶ Russian Federation organized RU BRAVO 1/2019 on 17th April, 2019.

The Black Sea Commission (BSC) is also involved in:

- ▶ Capacity building: organising professional trainings, courses and workshops in cooperation with IMO, OSPRI, etc.;
- ▶ Harmonization of strategies in combating oil pollution at the regional level (Turkey and Bulgaria (March, 2018) ratified BWM Convention; ; Georgia (submitted National Plan));
- ▶ Collection and providing of information about shipping and ship-based pollution in the region;
- ▶ The Black Sea Information System (BSIS) includes ESAS component (updated/improved under EC MONINFO Project; EMBLAS Project; Black Sea Monitoring and Assessment program (BSIMAP 2017-2022));
- ▶ Annual National reporting to the BSC is constantly organised (data on ballast waters, dumping, PRF, cargo turnover, response operations, fleet renovation, monitoring of oil pollution, policy/legislation developments, IMO Conventions and EC regulations implementation, etc.);
- ▶ In 2016 the shipping-related part of the BSIMAP was adopted by BSC (document is in line with MSFD provisions).

The Advisory Groups to the Commission on the Protection of the Black Sea Against Pollution or Black Sea Commission (executive body of the Bucharest Convention), serve as its main source of expertise, information and support. One of the six Advisory Groups (AG) to the Black Sea Commission is AG on Environmental Safety Aspects of Shipping (ESAS), and it annually meets to discuss the implementation of Bucharest Convention and Emergency Protocol, as well as to harmonize regional approaches and to introduce new techniques for fighting maritime pollution at sea. The ESAS AG prepares annual report to the Black Sea Commission based on data on ballast waters, dumping, port reception facilities (PRF), cargo turnover, response operations, fleet renovation, monitoring of oil pollution, policy/legislation developments, IMO Conventions and EC regulations implementation and other important maritime security issues.

The group carries out annual updating of the Black Sea Contingency Plan Annexes, such as:

1. Directory of competent national authorities, contact points, emergency response centres, national on-scene commanders and other relevant addresses;
2. Maps showing possible sources of pollution, environmental sensitive areas, priorities for protection;
3. Communication System;

4. Directory of response personnel and inventory of response equipment, products and other means which each party might offer as assistance in case of the activation of the Plan;

5. National Contingency Plans;

6. Guidelines for reporting oil spills;

7. POLREP pollution reporting system;

8. Claims manual.

Since 2010, the International Maritime Organization (IMO) and the BSC implement an MoU on technical co-operation (it was renewed in May 2012 and November 2013), making the Black Sea Commission a full IMO implementing partner for capacity building activities in the Black Sea area under its Integrated Technical Cooperation Programme. The ESAS AG requested the BSC Permanent Secretariat to apply to IMO on the possibility to conduct regional trainings under updated IMO OPRC Model Courses, under MARPOL Annex VI (Chapter IV) and regarding the enforcement of the BWM Convention at regional level.

Regarding satellite surveillance, there is no agreed instrument on the regional level, at the same time: (a) Bulgaria and Romania are parties to the CleanSeaNet system for satellite surveillance of EMSA; (b) Georgia and Ukraine applied to EMSA for satellite images under EMSA relevant projects (TRACECA Maritime Safety I (SASEPOL), "TRACECA II - Maritime safety and security" project, BC SEA Project etc.); (c) In Russian Federation and Turkey there are respective systems in place SCANNEX (RU) and ITU CSCRS (TR) for satellite surveillance, providing services in the field of oil pollution control. Their capacities have been utilised in 2011 under MONINFO to expand the satellite surveillance to all Black Sea countries in addition to CSN services to assure full regional coverage, through so called Black Sea Sat Net.

Aerial Surveillance is also not established on a regular basis for the Black Sea region. Under the MONINFO Project the existing resources for aerial surveillance in the Black Sea countries were inventoried, but the issue remains at the national level.

As for illegal discharges/prosecution of offenders, inventory of sanctions systems for ship-based pollution was updated; at the same time strengthening of enforcement (including fines) is needed. On a national level, backtracking of illegal discharges, based on modelling and AIS data, is carried out in Bulgaria (VTOPIS, CSN), Romania (CSN) and Russian Federation (SCANEX), and is followed by detailed inspections in ports and prosecution. Detailed inspections are carried out in ports, as well, and several ships have been fined.

Overall, the BSC and its Permanent Secretariat are taking steps to promote regional cooperation on ship-source pollution and the introduction of penalties for pollution offences, as well as collection of necessary reporting information, nevertheless enforcement is needed. The level of cooperation and assistance of EMSA and IMO and other relevant partners is significant, at the same time harmonization of efforts and avoiding duplication of activities are essential. The BSC is making it utmost to support the countries in the enforcement of the provisions of relevant EU Directives and facilitation of national reporting obligations.



Therefore, the Black Sea Commission's activities and exercise programme are integral parts of the regional preparedness framework and enable countries around the Black Sea to co-operate and coordinate efforts in case of major oil pollution incidents. The region is undoubtedly better prepared to work together to address the challenges of a major oil pollution, the programme is evergreen and needs to be sustained into the foreseeable future to maintain preparedness levels.

DISASTER RELIEF AND MARITIME ASSISTANCE IN THE BLACK SEA (BULGARIAN APPROACH)

Title : SAR Operations – the Bulgarian Experience

by Georgi Tsonev

Topics:

- *SAR Operations – Main Actors*
- *International assistance*
- *SS MOPANG CASE*

The purpose of the presentation is to familiarize the participants of the symposium with the Bulgarian experience regarding the search and rescue operations in the Black sea region and to discuss the matter of the international assistance and cooperation.

The main participants of a search and rescue operation (or any disaster relief operation in that matter) are public or governmental organizations such us Executive Agency Maritime Administration (along with its Maritime Rescue Coordination Centre), Chief Directorate Border Police, General Directorate for Fire Safety and Civil Protection, Bulgarian Navy, Bulgarian Ports Infrastructure Company etc., along with private or non-governmental organisations and volunteers. Every “actor” in such event has his role, and in the end it will be successful only through cooperation and timely execution of the operation, by flexible and efficient use of the available resources.

The international cooperation in SAR operations, and particularly in the Black sea, is based upon a number of conventions and agreements – such as International Convention on Maritime Search and Rescue, Agreement on Cooperation Regarding MSAR among Black Sea Coastal States (Ankara Agreement), bilateral agreements between the governments etc.

The challenges are usually the different level of training and internal organisation of the various departments, the incompatibility in their communication equipment and the simultaneous conduct of police and SAR operations.

The best solution is to improve interoperability by trainings in conditions as close as possible to a real incident.

The presentation also includes a short introduction of the SS Mopang case – a still ongoing case about combating oil pollution from WWI wreck ship, which sank on July 1, 1921 after hitting a mine near the port of Burgas.



DISASTER RELIEF AND MARITIME ASSISTANCE IN THE BLACK SEA

Title : Organization of the SAR and Oil Spill Response in the Russian Federation

by Victor Chernov

In this study, organizations operating in Russian Federation for SAR and Oil Spill Response and their area of responsibilities are introduced. Marine Rescue Service (MRS) is subordinated to the Federal Agency of Maritime and River Transport of the Ministry of Transport of the Russian Federation. MRS and State MRCC are composing the State executive body in the field of maritime SAR, oil spill response and disaster preparedness. State MRCC is responsible for organization and coordination of SAR operations within the SRR of the Russian Federation. MRS is responsible for the SAR, oil spill and disaster preparedness of SAR teams and salvors, vessels and oil spill response equipment and naturally for performing of SAR, oil spill response and maritime assistance within the SRR of the Russian Federation.

MRS has extensive experience in disaster relief operations and marine assistance at sea. One of the most memorable MRS's salvage operations in 2019 is the firefighting on LPG tanker "Maestro" and LPG tanker "Candy" in the Black Sea.

MARINE TRAFFIC AND ACCIDENT ANALYSES IN THE BLACK SEA

by Assoc.Prof.Sercan Erol

Abstract

The Black Sea is a marine area with defined maritime jurisdictions within the framework of agreements made with the Black Sea littoral states. Most of the trade between the coastal countries of the Black Sea is seaborne. Therefore, the current sea traffic in the Black Sea can affect the occurrence of marine accidents. Marine accidents taking place in Black Sea will most likely result in loss of life, economic losses and environmental disasters. Hence, it is necessary to evaluate the cause of the accidents occurring in this region to comment on the common precautions. In addition, effectiveness of ship inspections should be questioned in order to reduce accidents in this area. In this study, marine accident statistics in the Black Sea and Maritime Labour Convention (MLC) 2006 regulations were evaluated together. This study aims at revealing the relationship between maritime accidents occurred in the Black Sea and MLC regulations.

Introduction

The world seaborne traffic is gradually growing with the volumes surpassing 10 billion tons on the outcomes of 2018 (UNCTAD, 2018). Increasing traffic and increasing numbers of ships make marine accidents inevitable (Lloyds, 2018; MAIB, 2019; Uğurlu and Yıldız, 2016; UNCTAD, 2018). When sea areas where accidents occur intensively are examined; "Eastern Mediterranean and Black Sea" is the second densest area between 2008 and 2017 (Figure 1).

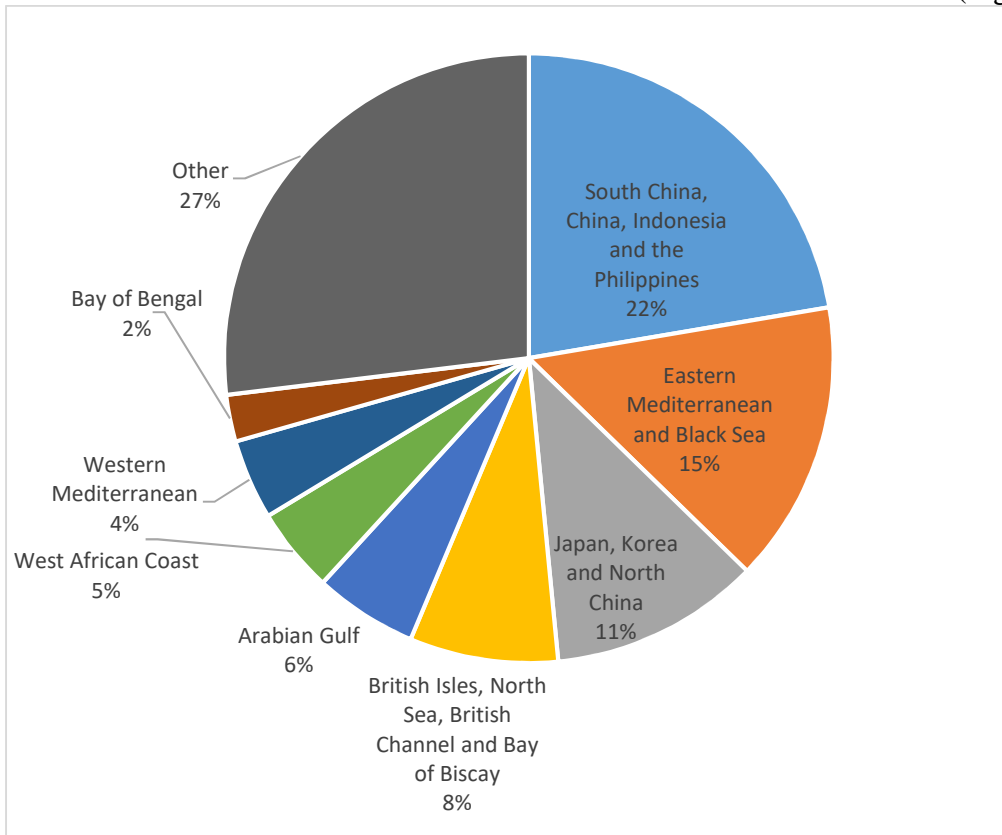


Figure 1. Distribution of ship losses between 2008 and 2017 by geographical regions (Lloyds, 2018)

The Black Sea is one of the most important marine areas where marine trade is intense. There are 6 countries (Bulgaria, Georgia, Romania, Russia, Turkey and Ukraine) on the Black Sea coast and with ports on these coasts. The biggest ports of these countries in terms of maritime trade volume are in the Black Sea and they use the Turkish Straits (Istanbul and Çanakkale) to pass to the Mediterranean Sea (Figure 2). This has led to intensive sea traffic routes on the Black Sea (Figure 3). Therefore, the Black Sea is a marine area with high risk for marine accidents. As a result of the marine accidents that occur, material and moral losses arise. Investigation of the marine accidents in the region, identification of their causes and causal factors are necessary to ensure the sustainability of safe and efficient maritime trade.

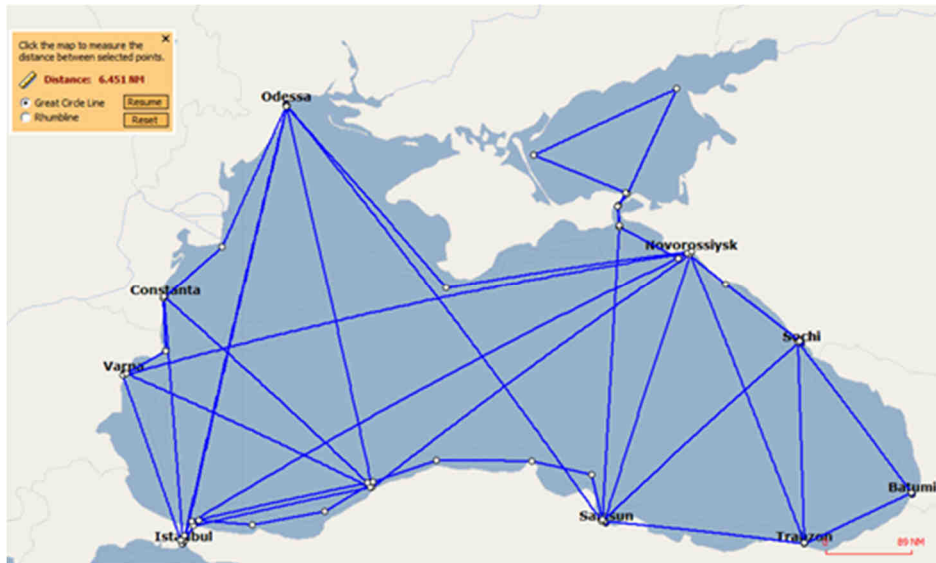


Figure 2. Main shipping routes in Black Sea (Traffic, 2019)

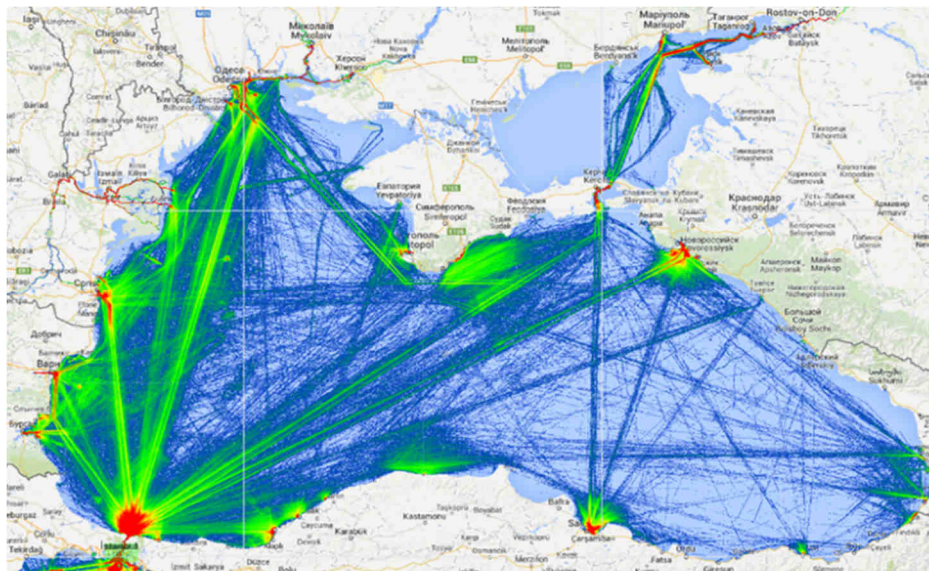


Figure 3. Seaborne traffic density map in Black Sea (Traffic, 2019)

In this study, marine accident statistics in the Black Sea were analysed. Maritime Labour Convention (MLC), which was put into force by IMO in 2006, aims to improve and maintain the working conditions of seafarers (Lillie, 2008; McConnell et al., 2011). Since the improvement of working and living conditions on board will increase the welfare of seafarers, it can be thought that it can reduce accidents caused by human factors especially fatigue, psychological and social factors. In this study, marine accident statistics and Maritime Labour Convention (MLC) 2006 regulations in the Black Sea were evaluated together. Aim of the study is to reveal the relationship between maritime accidents occurred in Black Sea and MLC regulations.

Maritime Accidents in Black Sea


From the Titanic, which is the first marine accident to which an official investigation was carried out, when the accident analysis studies in the literature are examined, it is revealed that the biggest factor in the marine accidents is the human factor (60-80%) (Table 1) (Schröder-Hinrichs et al., 2012; Uğurlu et al., 2018; Yıldırım et al., 2017;). When the data in Table 1 is examined, it is seen that the accidents caused by human error in Turkish territorial waters and Turkish Marine Search and Rescue Area are collision-contact, grounding, fire-explosion and sinking respectively (Erol and Başar, 2015; Uğurlu et al., 2016).

Table 1. Distribution of Accidents Caused by Human Error by Region

Accident type	Region								Total	%
	Istanbul	Canakkale	Izmir	Mersin	Antalya	Samsun	Trabzon	International		
Sinking	19	7	11	4	6	10	1	0	58	10
Grounding	56	60	22	2	5	5	2	2	154	26
Fire-Explosion	40	9	19	3	7	1	0	2	81	13
Collision-Contact	155	19	13	4	4	3	1	3	202	33
Machinery failure	3	17	3	0	0	0	0	0	23	4
Incident	19	7	10	1	1	1	2	1	42	7
Other	15	14	2	5	1	3	0	3	43	7
Total	307	133	80	19	24	23	6	11	603	100
%	51	22	13	3	4	4	1	2	100	

IMO began to deal with the human element since the 1980s. IMO and its sub-committee, the MSC (Maritime Safety Committee), decided to start and work on human error and fatigue at its 71st session (from 19-28 May 1999). To encourage the investigation of marine accidents by member states, the Casualty Investigation Code and Guidance on Fatigue Mitigation and Management have been published (IMO, 2008). In order to minimize the human factor, all parties of the maritime sector (IMO, states, maritime companies, institutions, etc.) are constantly working. IMO's MLC 2006 regulations are one of the examples.

The MLC Convention is an international convention on seafarers' working arrangements. The MLC is intended to complement the three key maritime conventions, International Convention for the Safety of Life at Sea (SOLAS), International Convention for the Prevention of Pollution from Ships (MARPOL), International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) and to become the fourth pillar of the international regulatory regime in the maritime field (Dolumbia-Henry et al., 2006; Adăscăliței, O., 2014). The provisions of the Convention include substances and regulations; it determines the fundamental rights, principles and basic obligations of the members who ratify the



convention. The code is; details of the implementation of the regulations. Section A is composed of two parts, including the mandatory provisions and Section B, which are non-mandatory recommendations. The code deals with the seafarers' labour issues under 5 main headings; minimum requirements for seafarers to work on a ship; employment conditions; accommodation, recreation facilities, food and beverage service; health protection, medical treatment, welfare and social security protection; compliance and enforcement.

Improper working conditions, intensive working hours and fatigue related factors can cause some negative consequences (Smith et al., 2006).

Improper conditions reduce individual welfare and performance, safety, social relationship with other seafarers on the one hand; they increase accident risk, mental health problems, digestive diseases and infection risk on the other. Moreover, they trigger chronic illnesses, induce occupational disability and distractions, and affect respiration and circulation.

Results and Discussion

In spite of technological developments on marine and international safety rules, current accident rates in the sector still constitute a serious problem. The study showed that in spite of all precautions, marine accidents could not be prevented. Hence, it is necessary to evaluate the cause of the accidents occurring in this region to in order to reduce accidents in this area.

In addition to the investigation of accidents and the publication of national and international regulations for the prevention of accidents, the extent to which these regulations are implemented and their effectiveness should be monitored. When the results of the Paris MOU audit are examined, it is seen that the number of nonconformities caused by MLC violation is very low in numbers (Paris MOU, 2018). This shows that ships often meet MLC requirements. However, accidents caused by human factors reveal that meeting MLC requirements cannot reduce accidents caused by fatigue, overwork, social and psychological factors to the extent desired.

In order to prevent ship accidents and work accidents at sea, the focus should be on issues that lead to human error (underlying factors); physiological, social and psychological factors. As a result of the researches, it has been observed that there are suggestions and regulations in the direction of eliminating these factors on the basis of international regulations. When these factors are eliminated, accidents will be minimized. When carrying out accident analysis, risk analysis and safety assessment studies, the following must be considered; the relationship between ship inspection results (Black Sea MOU) and accident causes should be analysed, MLC provisions should be inspected more strictly in ship inspections, crew resting hours should be checked very carefully.

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BLACK SEA ENERGY SECURITY

Title : The Black Sea Region Energy Security: Risks and Opportunities

by Azime Telli, Ph.D.

Energy, which is one of the most important resources of economic growth and development, has an increasing importance because of its impacts on the economies at national and international level. Today, to be the dominant power in the energy markets, in addition to having energy resources, energy producing with an acceptable cost and transporting safely are also important. In this context, in response to the growing global energy demand, the issue of security of energy supply is on the agenda of countries which produce energy and export it as well as countries foreign dependent on energy. While this problem is related to field of politics, the discussions about the definition and measurement of energy supply security have continued in the theoretical literature. In this research the problem of security of energy supply and its sub-components are defined, and has been mentioned how to measure the energy diversification within the context of Black Sea countries (Bulgaria, Romania, Georgia, Russia, Ukraine and Turkey) to solve this problem. The Black Sea region security environment is evolving rapidly. In this context, the threats and risks in the region can be grouped into three kinds: those related to rivalry among the great powers in the region, the potential flashpoints which could at any time trigger a major crisis and the transnational threats and risks that are of concern to all the Black Sea countries.

THE DRIVING SECTOR OF DEVELOPMENT: MARITIME TOURISM

by Cahit Işcen

The purpose of this article is to give an overview of tourism and in particular maritime tourism, to emphasize the importance of tourism in the world, Turkey and the Black Sea Region, the legal framework of the certification of marinas and maritime tourism vehicles licensed by the Ministry of Culture and Tourism in Turkey, information and statistical data about certificated marinas and maritime tourism vehicles and finally cooperation in the field of maritime tourism between littoral states in the Black Sea.

As known, tourism industry is widely recognized as the world's largest industry in terms of number of people involved, revenues, employment, economic impact on various areas and sectors such as agriculture, farming, textile, construction, highway, railways, air and marine transportation, cleaning products, painting sector, furnishings as well as social and cultural impacts on the societies in the world.

According to the latest United Nations World Tourism Organisation (UNWTO) Tourism Barometer, International tourist arrivals grew 6% in 2018, totaling 1.4 billion. The World Tourism Barometer from the World Tourism Organization shows that international tourism continued to grow over the first quarter of 2019¹. Enhancing promotion of tourism destinations, stronger economic growth, more affordable air travel, technological changes, new businesses models and greater visa facilitation around the world have accelerated growth in recent years.

The growth of tourism in recent years confirms that the sector is today one of the most powerful drivers of economic growth and development. Today, the business volume of tourism equals or even surpasses that of oil exports, food products or automobiles. Tourism has become one of the major players in international commerce, and represents at the same time one of the main income sources for many developing countries.

Managing tourism in a sustainable manner and translating this growth into real benefits for all countries, creating opportunities for jobs and entrepreneurship, promoting all kinds of tourism - leisure and business, coastal and maritime tourism, cruising, health and wellness tourism, gastronomy, urban-rural and mountain tourism and cultural tourism is the responsibility of all countries to ensure economic and social development of their societies.

MARITIME TOURISM IN THE BLACK SEA, YACHTING AND MARINAS

Maritime tourism is defined as any sea-based activity such as boating, yachting, cruising, nautical sports and includes their respective land-based services and infrastructure like marinas and wharfs. Therefore maritime tourism is an important component of tourism in the world.

Maritime tourism consists of two main tourism activities in Turkey:

¹ United Nations World Tourism Organization Tourism Parameter

- Marine tourism facilities (marinas)
- Maritime tourism vehicles.

Marine tourism facilities such as cruise marinas, yacht marinas, wharfs and piers offer mooring, water and electricity, machine maintenance and repair, electric and electronic repair, inner and outer cleaning of maritime vehicles, toilet and shower, laundry and ironing, wireless internet, parking for cars, traffic control tower and camera control, fire and extinguishing systems, diesel and gasoline, engine oil, market, communication (fax, telephone), first aid and doctor and social services to all maritime tourism vehicles and owners.

Maritime tourism vehicles consist of cruises, yachts, daily excursion vessels, submersible tourism vessels and surface water / underwater tourism vehicles. All maritime tourism vehicles are licensed by the Ministry of Culture and Tourism of Turkey to have high standards and to be able to compete in international level.

Marine tourism facilities and maritime tourism vehicles are licensed according the maritime tourism regulations and legislations. The Legal Framework of Maritime Tourism In Turkey:

- Tourism Promotion Law Number 2634 (came into force in 1983 and new amendments has been made in 2019)
- Maritime Tourism Regulatory Act (came into force in 2009)
- Regulatory Act of Sportive Activities For Tourism Purposes (came into force in 2011)
- Implementing Regulations of Maritime Tourism Regulatory Act (came into force in 2010)

The legal framework of maritime tourism consists of the regulation and legislation mentioned above. The certification of all marinas and maritime tourism vehicles are done according these legislations and necessary documents for the certification have to be submitted to the Ministry of Culture and Tourism of Turkey.

Types of Maritime Tourism Activities in Turkey;

- Management of maritime tourism facilities such as cruise ports, yachts marinas, wharfs, piers that provide services like secure mooring, landing, maintenance and repair, food & beverage and social activities.
- Management of maritime tourism vehicles such as cruise ships, yachts, daily excursion vessels, diving maritime tourism vehicles, floating maritime tourism vehicles that provide services like tours, sightseeing, sports, food and entertainment services.
- Management of surface water and underwater activity vehicles for tourism purposes such as commercial maritime tourism vehicles that provide services like diving, water skiing, scuba diving, snorkeling, paragliding, surface water and underwater sporty activities, sightseeing and entertainment services.

The Activities Performed By the Ministry Of Culture and Tourism of Turkey in the Field of Maritime Tourism:

- Evaluating, certification and documenting the demands of maritime tourism facilities (marinas, wharfs, berths) and maritime tourism vehicles (yachts, daily excursion boats, floating maritime tourism vehicles, water/underwater sports vehicles for tourism purposes) according to the provisions of the legislation in force,
- Extending the period of stay of foreign flagged private yachts visiting our country,
- Conducting studies on cruise and cabotage rights in Turkish territorial waters,
- Coordination with related institutions and organizations for the solution of the problems encountered in the maritime tourism,
- Carrying out studies on bringing the laws and regulations related to maritime tourism to the conditions of the day,
- Conducting studies to improve maritime tourism and to increase competitiveness in the international arena.

Types of maritime tourism facilities licensed by the Ministry of Culture and Tourism of Turkey:

- Cruise Ports
- Yachts Marinas
- Other Facilities (piers, wharfs)

Types of Maritime Tourism Vehicles Licensed by the Ministry of Culture and Tourism:

- Cruise
- Yachts
- Daily excursion vessels
- Diving maritime tourism vehicles
- Other maritime tourism vehicles
 - Floating maritime tourism vehicles
 - Special maritime tourism vehicles
 - Water and underwater maritime tourism vehicles.

Maritime Tourism Automation System:

The Ministry of Culture and Tourism uses ‘Marine Tourism Automation System’ to obtain accurate and up-to-date data about Maritime Tourism Facilities (marinas) and Maritime Tourism Vessels (yachts, daily excursion vehicles and others) in Turkey.

Thanks to this system, all data about the certification of marinas and maritime tourism vehicles, such as capacity, numbers and location can be obtained.

Maritime Tourism Facilities (Marinas) Licensed by the Ministry of Culture and Tourism (30.07.2019)²

		Number of Facilities	Total Capacity
Maritime Tourism Facilities Licensed (Operational)	Marinas	33	12.614
Maritime Tourism Facilities Licensed (Investment)	Marinas	8	3.530
	Cruise Port	1	-
Maritime Tourism Facilities Total:		42	16.144

The number of maritime tourism facilities certificated by our Ministry is 42 with a total capacity of 16.144 mooring posts.

Distribution of Maritime Tourism Facilities (Marinas) Certificated by the Ministry of Culture and Tourism in Turkey

(By Province and Yacht Mooring Capacities 30.07.2019)³

City	Number of Marinas	Mooring Capacity		Total
		Sea	Land	
Muğla	25	4970	1814	6784
Istanbul	4	2640	530	3170
Izmir	3	1117	280	1397
Antalya	3	637	460	1097
Balikesir	2	200	290	490
Aydın	2	886	600	1486
Mersin	2	700	700	1400
Yalova	1	240	80	320
Total	42	11.390	4754	16.144

Maritime Tourism Vehicles Certificated by the Ministry Of Culture and Tourism in Turkey (30.07.2019)⁴

		Number Of Yachts	Number Of Yacht Beds
Maritime Tourism Yachts Licensed	Turkish Flagged Yachts	1.649	16.723
	Foreign Flagged Yachts	145	1.082
	Total	1.794	17.805

The total number of yachts licensed by the Ministry of Culture and Tourism is 1.794 and total bed capacity of these yachts is 17.805. The total number of daily excursion vessels is 2.216 and total capacity of these vessels is 132.726. Maritime Tourism Legislations in Turkey allow foreign flagged private yachts to stay for 5 years in Turkey.

²Ministry of Culture and Tourism Statistics

³Ministry of Culture and Tourism Statistics

⁴ Ministry of Culture and Tourism Statistics

		Number of Vehicles	Capacity
Maritime Tourism Vehicles Licensed	Floating Maritime Tourism Vessels	47	17.194
	Diving Maritime Tourism Vehicles	2	68
	Daily Excursion Vessels	2.216	132.726

MARITIME TOURISM AND THE BLACK SEA/TURKEY

There are twenty (20) port authorities and more different sized wharfs and harbors in the Black Sea Region of Turkey. The ports in the Region are providing services to yachts and daily excursion vessels as well as fishing, freight and passenger transport. However, there isn't any marine tourism facility (marina) in the Black Sea Region Licensed by the Ministry of Culture and Tourism of Turkey.

In the Black Sea Region Bartın, Sinop, Samsun and Trabzon Ports are serving cruise tourism. It is expected that the number of cruise ships visiting the Black Sea Region will increase in the next seasons. Cooperation in maritime affairs and the potential of maritime tourism and economy in the Black Sea have gained visibility and attention in the recent years.

The Number and Capacity of Certificated Yachts in the Black Sea Region of Turkey (30.07.2019).

City	Number of Yachts	Capacity
Bartın	1	12
Kastamonu	1	10
Ordu	1	6
Total	3	28

The Number and Capacity of Certificated Daily Excursion Vessels in the Black Sea Region of Turkey (30.07.2019)⁵

City	Number of Daily Excursion Vessels	Capacity
Zonguldak	6	152
Bartın	16	491
Kastamonu	1	22
Sinop	35	816
Samsun	3	918
Ordu	6	171
Giresun	2	415
Trabzon	2	31
Total	71	3016

⁵ Ministry of Culture and Tourism Statistics

The Black Sea is bordered by seven countries: Bulgaria, Republic of Turkey, Georgia, Romania, Russian Federation, Republic of Moldova and Ukraine. The littoral countries should implement the following issues to improve maritime tourism in the Black Sea:

- to develop the maritime tourism sector that has high potential for jobs, employment and sustainable growth.
- to provide knowledge, legal certainty and ensuring security in the Black Sea,
- to create sea basin strategies including littoral countries to improve the maritime tourism.
- to share knowledge and experiences on maritime tourism (certification of maritime tourism facilities and vehicles) to foster cooperation between countries.
- to foster synergies, dialogue and coordination among their maritime tourism sectors, both public and private.
- to support capacity building and cross-border and transnational cooperation on marine and maritime issues.

Blue Flag and the Black Sea Region:

The Blue Flag Programme, which is operated by Foundation for Environmental Education (FEE), strives to provide sustainable development in freshwater and marine areas. It promotes local authorities and beach operators to achieve high standards in water quality, environmental protection and management, environmental education and safety.

According to 2019 data of Foundation for Environmental Education (FEE), with 463 Blue Flagged Beaches Turkey is 3th amongst 45 countries and with 22 Blue Flagged Marinas Turkey is in the 7th place amongst the other countries. Also, 15 commercial yachts have blue flag in Turkey.

Blue Flagged Beaches in the Black Sea Region (2019)⁶

City	Number of Blue Flagged Beaches
Samsun	12
Ordu	2
Düzce	3
Total	17

COOPERATION WITH LITTORAL COUNTRIES IN THE BALACK SEA IN THE FIELD OF MARITIME TOURISM

In order to increase cooperation, the Ministers responsible for maritime affairs from the Black Sea Coastal States – **Bulgaria, Republic of Turkey, Georgia, Romania, Russian Federation, Republic of Moldova and Ukraine** – met in Burgas on 31 May 2018 under the chairmanship of Bulgaria.

⁶ Turkey Foundation of Environmental Education data

The participating countries approved the Burgas Ministerial Declaration on these maritime fields in the meeting: shipping, passenger and cruising lines, the promotion of transport connectivity, maritime and coastal tourism, maritime education and training, marine research and innovation, maritime investment, marine environmental protection, environmental observation and monitoring.

The Common Maritime Agenda was approved by the Ministerial Declaration on a Common Maritime Agenda for the Black Sea in Bucharest/Romania on 21 May 2019. The Common Maritime Agenda for the Black Sea is set and agreed by the seven participant countries mentioned above aims to determine goals, priorities and actions and the promotion of enhanced cooperation on maritime affairs among the littoral countries.

The goals of the Common Maritime Agenda are:

- Healthy marine and coastal ecosystems,
- A competitive, innovative and sustainable blue economy for the Black Sea
- Fostering investment in the Black Sea blue economy

Promoting all kinds of tourism and especially maritime tourism, as well as synergies between inland tourism and coastal & maritime tourism, exploring of underwater cultural heritage itineraries, cruising including small-scale cruising and yachting are among the priorities of the Agenda targets.

In this context, Turkey which ranks 6th among the most visited countries in the world with 46.112.592 tourists by the end of 2018, aims to enhance cooperation with the Black Sea coastal countries in all fields of maritime tourism.

Identifying areas of cooperation on maritime tourism between countries in the Black Sea will be a very important step for economic development. From this point, participating countries need to cooperate in the following subjects:

- sharing the best practices, knowledge and experiences between countries on maritime tourism
- encouraging to provide maritime data collection and sharing through existing databases related maritime tourism,
- promoting cruising, including small-scale cruising and yachting in the Black Sea,
- raising awareness among public authorities and citizens on marine environmental issues for sustainable maritime tourism,
- creating synergies between inland, coastal and maritime tourism in the Black Sea coastal countries,
- developing common and voluntary rules for marinas infrastructure development,
- creating a voluntary and common certification system of maritime tourism vehicles,
- promoting dialogue between port operators, marinas, yacht and cruise operators and other public and private maritime tourism stakeholders.



From this perspective, enhancing cooperation between countries in the Black Sea on sustainable maritime tourism in line with the goals, priorities and actions of the Common Maritime Agenda is imperative to create new jobs, employment, economic and social development in the littoral countries.

Consequently, improving all kinds of maritime tourism, such as yachting, cruising, marine management, underwater tourism activities as well as strengthening of marina infrastructure, diversification of tourism products and sharing the best practices and experiences on the field of maritime tourism with all littoral countries in the Black Sea will significantly contribute to economic development and welfare of societies in the Black Sea basin.



SPEECHES

WELCOME SPEECH

Capt (N) Sümer Kayser, Director of MARSEC COE

Admiral, ladies and gentlemen, good morning.

I am Capt.SümerKayser, Director of Maritime Security Centre of Excellence (MARSEC COE).

Before I start my speech, I would like to thank your participation the International Black Sea Maritime Security Symposium-2019, which is specifically important for us because this is the first of a series of conferences we are planning to organize in cooperation with academia, international organizations and the countries.

We believe that closer cooperation with universities and international organizations along with other stake holders of maritime security sector is essential to creating a safe and secure maritime environment.

Maritime domain provides an ideal medium for traditional security issues as well as new and evolving challenges such as terrorism, proliferation of weapons of mass destruction; cross-border organized crime and irregular migration continue to be major concerns against the sustainable peace and prosperity around the world.


It is the most efficient and cost-effective method of international transportation of goods, providing a dependable, low-cost means, globally, facilitating commerce and helping to create prosperity among nations and peoples.

Maritime transportation is dominantly focused on freight since there is no other effective alternative to the long distance transportation of large amounts of freight. The systematic growth of maritime freight traffic has been fueled by: increase in energy and mineral cargoes, globalization and technical improvements.

Over the last 150 years by providing cheap, reliable and efficient transport, the shipping industry has helped turn the world into a single market place. It does not matter where companies produce their raw materials and goods, they can be delivered to market for just a few dollars. As a result today the world is well along the road to an integrated global economy and maritime transport is playing a crucial and highly effective part in this process.

Therefore maritime security is becoming increasingly important for all states including even the landlocked countries and navies' role is to support safeguarding the maritime domain as globalization has both negative and positive effects over the seas.

World chokepoints for maritime transit of oil are critical part of global energy security. About 63 % of the worlds oil production moves on maritime routes. The strait of Hurmuz and the Strait of Malacca are the world's most important strategic chokepoints by volume of oil transit.



Istanbul and Çanakkale Straits, shortly Turkish Straits do not only provide a vital link, but also constitute a major artery for the oil transit. The amount of Black Sea Basin originated oil transportation through Turkish Straits has reached approximately 145 million tons in a year. In other words, 3 million barrels of oil by 25-30 tankers are being transported to the global markets on a daily basis. 40 % of this amount of this served to Europe which is supposed to be reaching 70 % by the year 2020.

Turkey's maritime security perspective can be described as the collective efforts of maritime situational awareness, maritime security operations and maritime security capacity building. In this context, Turkish Navy established a multinational maritime security center of excellence with potential participation of allied and partner countries, in order to provide a platform among the maritime security stake holders such as government, industry, private sector and universities in 2012. Our aim is to contribute to maritime security conceptually and practically.

The main philosophy of MARSEC COE is inspired from smart defence and whole of government approach, which is to draw together the experience from countries and exploit this pool of expertise to foster dialogue among maritime security stakeholders on the basis of multinational, cross-functional and interagency coordination.

From the opening of the center until today, 14 courses organized, 308 trainees from 34 different countries participated these courses; 3 maritime security workshops and 1 PSI workshop organized, 3 different Marsec exercises were conducted. In addition to these courses, as part of our capacity building activities, our mobile training teams provided maritime security trainings in different countries.

Building upon our already extensive involvement of those activities and our ambition, it was decided to carry this regional endeavor to the next level. We are organizing our first international maritime security symposium which is "International Black Sea Marsec Symposium-2019".

This annual symposium will not only provide the intellectual power and context for future maritime security events, but also will bring together key individuals, leaders and decision makers from international, regional and national maritime security organizations, government/military officials, representatives from shipping and industry.

I would like to finish my speech with a quote from our great leader, Mustafa Kemal Atatürk, "Peace at Home peace in the World". Thank you very much for your very kind attention.

OPENING REMARKS

Admiral Adnan ÖZBAL, Commander of Turkish Naval Forces

Dear distinguished participants,

Welcome to the International Black Sea Maritime Security Symposium-2019. It's a great pleasure for me and for the Turkish Navy to host you in İstanbul.

Dear participants,

The Black Sea Basin is a significant region in terms of its geostrategic location, which provides access to Balkans, Eastern Europe, Caucasus, Caspian Sea, Middle East and the Mediterranean.

Black Sea is the natural heritage of the peoples of the Black Sea countries and should be preserved as a region of peace for the benefit of present and future generations. It is an important transport and energy hub for the littorals. The sea lines of communications starting from the Black Sea and passing through Turkish Straits are used as the main export route for Russian and Caspian oil. Besides sea transportation, several natural gas pipeline projects are also being realized in the Black Sea Basin. That leads us to believe that Black Sea born maritime transportation and energy pipelines will continue to play a significant role in the world trade and energy equation.


Tourism, fishing and agriculture also represent important economic activities for the littoral states. The combination of all these factors performed in the same area requires cooperation, avoiding conflicts, fighting the challenges together and creating synergies between littoral nations.

Black Sea States have already achieved this in the past, and demonstrated both political will, as well as the necessary skills to develop various methods of cooperation. In particular, BSEC (Black Sea Economical Cooperation) in the sphere of economy and BLACKSEFOR in the sphere of security were excellent outcomes of these cooperation efforts and both initiatives still exist.

Agreements and protocols covering large spectrum of cooperation in many fields ranging from security and economy to environment and humanitarian assistance have been signed among the Black Sea littorals. The establishment of such institutions plays a vital role to foster dialogue and mutual understanding. These efforts also support UN, OSCE and other institutions' initiatives in dealing with existing and emerging security risks and challenges.

- Chiefs of Black Sea Navies Conference (CBSN),
- Black Sea Littoral States Border/Coast Guard Agencies Cooperation Forum,
- Confidence and Security Building Measures in the Black Sea,
- Operation Black Sea Harmony,

are some of those initiatives that have proven their success and helped developing security cooperation in the Black Sea.



Though, some of these mechanisms may be in dormant status today, yet they are perfect tools for cooperation in the Black Sea.

Our experience and practices show us that, in order to establish peace and stability, the region should be transformed from a competitive security and stability situation in the Black Sea with its multinational and cross-functional nature requires all littoral states to take advantage of available regional instruments.

We should admit the fact that, neither abandoning existing mechanisms nor creating new frameworks without the participation of all littoral states can enhance security in a real and lasting manner. That said, looking to the future; Turkey's main stance, that maritime security in the Black Sea should be maintained primarily by the Black Sea littorals, still continues.

The Montreux Regime is the linchpin of stability and predictability in the Black Sea, since its entry into force in 1936. This has been the case even at the most challenging times of the Cold War.

Therefore, objective and diligent implementation of the Montreux Convention is part of sustainable peace in the Black Sea region. We are determined to fully adhere to the restrictions and regulations enshrined therein. Even during challenging times, we should not have any worries or hesitations about upholding these rules and the international law.

The Montreux Convention proved its worth, necessity and success. Attempts to undermine, erode or change it pursuing short-term policies is meaningless and to the benefit of nobody.

Preservation of security and stability in Black Sea region is an issue of priority for Turkey. Turkey's perspective is to make use of existing mechanisms to extend the possibility since they contribute significantly to the climate of confidence not only among the littoral states, but also in the wider region.


Key words of this regional cooperation policy can be summarized as: regional and transparency and inclusiveness.

In upholding stability in the Black Sea region, our main considerations are:

- Full compliance with the Montreux regime
- Sustainment of an exclusive regional identity
- Cooperative environment with littorals (regional ownership),
- Prevention of military escalation

Reestablishment of stability is in fact possible and to the benefit of all parties. Otherwise, both Black Sea and Euro-Atlantic security will need to confront a persistent challenge while all of us will have to suffer from enduring instability.

We believe it is possible to handle the regional and long-lasting problems with dialogue, by increasing mutual cooperation, and to take the necessary steps towards common understanding.



Building mutual trust between littorals which lead to solidarity in the region will definitely need patience and take time. Bu we need pursue all avenues to keep the dialogue open between all parties and strive to promote peace and stability in the region.

Turkey is ready to resume new responsibilities and take part in new initiatives based on her past experience and historical relations with the littoral countries.

At the end of my words, I will touch upon MARSEC COE, which today gathered all of us here. Being established in 2012, MARSEC COE has always been a center for strategic studies as well as a multinational hub for practical training in the field of Maritime Security. Now it is a multinational organization and NATO accreditation procedure is about to be finalized. I'm sure that MARSEC COE and this symposium will be main forum for Black Sea security studies in the following years.

Dear participants,

Concluding my words, I'd like to thank you once again for your participation. It's our plan to organize the Black Sea Maritime Security Symposium on annual basis and we are expecting your participation in the following years. I wish that this event will provide an opportunity for building a peace bridge between our esteemed countries.

CLOSING REMARKS

Capt (N) Sümer Kayser, Director of MARSEC COE

Admiral, Distinguished Guests,

It has been wonderful two days and the symposium has definitely demonstrated the ambition of close cooperation and collaboration especially between the black sea coastal countries in terms of maritime security.

First of all, I would like to begin to thank the Turkish Naval Headquarter and our admirals for giving this opportunity to MARSEC COE to organize this special event. And, I would like to thank the panel moderators and the speakers who have done a great job during the symposium and off course to you, audience, for your participation in our first International Black Sea Maritime Security Symposium. Also, thank you for the Naval Museum Commander and his staff for their support to hold this symposium in such a historical environment.

The International Black Sea Maritime Security Symposium-2019 has been the first of the series of MARSEC COE symposiums we are planning to organize in close cooperation with academia, international organizations and other stakeholders of maritime security.

This annual symposium has not only provided the intellectual power and context for future maritime security events, but also brought together key individuals, leaders and decision makers from international, regional, and national maritime security organizations, government/military officials, representatives from shipping and industry.

During the symposium, we have touched some of the Black Sea maritime security related topics from the Black Sea countries approach such as:

Historical review of the Black Sea,

Turkey's vision about the International Black Sea Festival,

Importance of Montreux Convention,

The Black Sea economy, tourism and energy routes,

Climate change and maritime pollution,

Oceanography, disaster relief and maritime assistance in the Black Sea.

To sum up, one more time we have found that, Black Sea is definitely a unique sea in the world since it is the only sea with its special regime which is Montreux Convention and the discussions we have done during the symposium have shown the necessity of regional cooperation, collaboration, coordination, common interest and importance of information exchange among the Black Sea coastal countries.



As in our motto “Working together for maritime security”, our ambition is to conduct these kind of symposiums annually and we are looking forward to meeting you here again in İstanbul in the next symposium.

We are planning to release a symposium proceeding book, and kindly remind the speakers to share their first draft of the articles by 02 August 2019 and final version by 02 September 2019.

And last but not least, I would to thank all MARSEC COE staff including Symposium Organization Committee and other admin staff, who have shown a fantastic effort in order to organize this symposium. You did a great job. Let’s give applause to MARSEC COE team.

Thank you very much again for your participation and the fruitful discussions.

Enjoy the museum tour and the boat tour. Don’t forget to spend for Turkish economy.



PICTORIAL



PICTORIAL











MODERATORS' PROFILES

Prof.Dr. Mitat ÇELİKPALA

Kadir Has University, Turkey



Prof.Dr. Mitat Çelikpala is Professor of International Relations and the Dean of Faculty of Economics, Administrative and Social Sciences at Kadir Has University, Istanbul. Prof.Çelikpala was graduated from Middle East Technical University in Ankara in 1992. He obtained his MA degree in 1996 from Hacettepe University, Ankara and PhD from the Department of International Relations, Bilkent University, Ankara in 2002. He teaches graduate and undergraduate courses on Eurasian security, energy and critical infrastructure security/protection, Turkish foreign and domestic policy and the Caucasus. Prof.Çelikpala is the board member of the Centre for Economics and Foreign Policy Studies (EDAM), the International Relations Council of Turkey and the Managing Editor of the *Journal of International Relations: Academic Journal*.

He previously served as an academic advisor to NATO's Center of Excellence Defense against Terrorism (COE DAT) in Ankara (2009-2012), especially on the regional security and the critical infrastructure protection; and was the board member to the Strategic Research and Study Center (SAREM), Turkish General Staff (2005-2011); Academic Adviser to the Center for Strategic Research (SAM), Turkish Foreign Ministry (2002-2010) and Caspian Strategy Institute, Istanbul Turkey (2012–2013). He was a Senior Associate Member at St Antony's College, Oxford University, UK (2005-2006). He has written for a number of academic publications including *Middle Eastern Studies*, *International Journal of Turkish Studies*, *Insight Turkey* and *Journal of Southeast European and Black Sea Studies*. He also contributed many conference papers on Turkish foreign policy, Turkish-Russian relations, Eurasianism and Turkish geopolitics.

MODERATORS' PROFILES

Prof.Dr.Gülşen ALTUĞ

İstanbul University, Turkey



GülşenAltuğ is a professor in the "Department of Marine Biology at Istanbul University, Faculty of Water Sciences, Department of Marine and Fresh Water Resources Management". She graduated from Çukurova University, Faculty of Science and Literature, Department of Biology in 1984. She worked in the Water Bacteriology and Toxicology Laboratories at TC Ministry of Health. She completed her Master in CÜ Institute of Graduate Studies in Sciences Biology Program in 1991. She completed her doctoral studies in 1995. Between 1997 and 2000, she worked as Assistant Professor at the CÜ Fisheries Faculty. In 2000, she was appointed as an As. Prof. at the Istanbul University Fisheries Faculty. In 2004, she received her title of Associate Professor in Marine Biology. In 2010, she was appointed as a professor at the same department. Since 2000, she has been working on marine bacteriology and marine biotechnology including bacterial diversity and micro-geographical variations, clinical, industrial and ecological uses of marine isolates, bacterial pollution, ships' ballast water, epibiotic bacterial communities and anti-bacterial characteristics, bacterial remediation (oil degrading capacity of marine isolates), resistant bacterial isolates against heavy metals and antibiotics in national and international marine areas. She has produced many first scientific data on marine bacteriology and economic use of marine bacteria in Turkey and published national / international various articles and book chapters in the field of marine bacteriology, biotechnology and pollution. She has worked as an executive on various projects and presented presentations in numerous international and national congresses. She has five patent applications related to the use of marine bacteria in different sectors. She is also an entrepreneur as a founder of a marine biotechnology company named BIYOTEK15 R&D Training and Consulting Industry and Trade Ltd Company operating in Istanbul University Technocity (ENTERTECH). She also has been working as volunteer consultant of TURMEPA Projects and University Marine Ambassadors Community. She is director of Environment and Security Committee of Turkish Shipowners' Association Scientific Committees. She is married with two children.

MODERATORS' PROFILES

Prof.Dr.Çağrı ERHAN

Altınbaş University, Turkey



Prof. Dr. Çağrı Erhan was born in 1972, in Istanbul. He graduated from Ankara University Faculty of Political Science, Department of International Relations in 1993. In 1996, he received his MA degree in International Relations from Ankara University and concluded his

Ph. D. in Hacettepe University Department of History in 2000. Prof. Dr. Erhan started his academic career as a research assistant at AUFPS Department of International Relations in 1994. He was appointed as an academic member (2000-2002), as an assistant professor (2002-2003), as an associate professor (2003-2009) and as a full Professor (2009-2015) at

the same department. In June 2015, he was appointed as President of Istanbul Altınbaş University.

He worked as assistant director of European Union Research Centre (ATAUM) between 2000 and 2003, as director between 2005 and 2015. In 2013, Prof. Dr. Erhan was awarded a Jean Monnet Chair by the European Union. Prof. Dr. Erhan is one of the founding editors of Journal of International Relations and Review of Ankara European Studies. He has held/holds several positions at Republic of Turkey Ministry of Foreign Affairs Center for Strategic Research (SAM), International Relations Council of Turkey (UIK), Turkish Commission of Military History, National Committee of Historiography, Editorial Board of History - Education Projects (Council of Europe), Center for International Political and Economic Relations. He was elected on February 2007 as a Board Member of the Atlantic Council of Turkey. In 2013, he was elected to Prime Ministry of the Republic of Turkey Ataturk Supreme Council for Culture, Language and History, Ataturk Research Center, Council for Scientific Studies. In 2014, he was appointed to Automation Advisory Board for the Archives of the Ministry of Foreign Affairs. Prof. Erhan is a member of Presidential Council of Security and Foreign Policy since 2018.

MODERATORS' PROFILES

Prof.Dr.Hasret ÇOMAK

Arel University, Turkey



He was born in 1956 in Bartın. He graduated from the Turkish Military Academy in 1976 on behalf of the Turkish Navy.

He completed three bachelor's degrees (Finance, Political Sciences and Law), one master's degree (International Relations) and two doctoral degrees (Economics, Political Science and Public Administration) at Istanbul University.

He received the title of “Associate Professor” in 1996 in the Department of “International Relations”.

In 1997, he was promoted to the rank of Navy Captain, Head of Department of Social Sciences, at Turkish Naval Academy. At the end of 2000, he retired willingly with the title of Assoc. Prof. Dr. and Navy Captain at Turkish Naval Academy.

Between the years 1997-2000, he served as the Representative and General Assembly member of the Turkish Armed Forces Assistance and Pension Fund (OYAK) which consists of 28 companies.

In 2001, he was promoted to full Professor to International Relations and International Law, in Kocaeli University, Faculty of Economics and Administrative Sciences (FEAS), Department of International Relations.

At Kocaeli University, he worked as the Head of Department of International Relations, FEAS in between 2001-2014, as the Dean of Faculty of Communication in between 2003-2005, as the Dean of Faculty of Economics and Administrative Sciences (FEAS) in between 2005-2006 and as Vice Rector in between 2006-2014.

From 2007 to 2014, he served as the Secretary General of the Union of Western Black Sea Universities (13 Universities).

He is a member of Istanbul Bar Association with 19562 Registry Number (Lawyer) and is a member of Istanbul Chamber of Certified Public Accountants with 1817 Registry Number (Certified Public Accountant).

In 2006, he was awarded with the “SCHOLAR WHO HAS STRATEGIC VISION” award by Turkish – Asian Center for Strategic Studies (TASAM) in Turkey.

In 2013, he was honored with the title of “HONORARY PROFESSOR” by the decision of Academic Council of “L.N. Gumilyov National Eurasian University”, Astana (Nursultan), Kazakhstan.

He retired from Kocaeli University on 2 January 2015 for the second time. On February 9, 2015, he was appointed to Istanbul Arel University, Faculty of Economics and Administrative Sciences (FEAS), the Department of International Relations.

He served as the Head of the Department of International Relations (Turkish and English) and the Director of the School of Applied Sciences, respectively.

He is currently the Director of Istanbul Arel University International Strategic Research Application and Research Center (ARELUSAM), the Director of the School of Applied Sciences and the Dean of the Faculty of Economics and Administrative Sciences (FEAS).

He is a member of 20 national and international scientific, social and cultural organizations.

He is Director of Association for International Law and Arbitration (KOCAELİ) and Director of Association for the Management of International Organizations (İSTANBUL)

He is Chairman of the Board, Independent Auditing and Chartered Accountant Company and President, Lex Metis Consulting Partners Company

In addition, it has been awarded by more than 30 scientific, cultural and social institutions and organizations. He has over 50 books and over 100 articles.

His wife, Assoc. Prof. Dr. NebahatÇomak is an academic at Galatasaray University, Faculty of Communication.

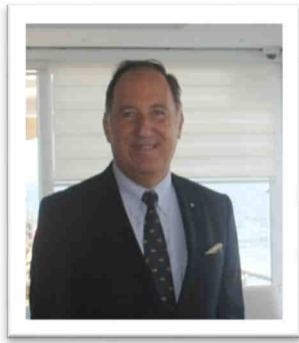
SPEAKERS' PROFILES

Serkan KEÇECİ, Ph.D.
DokuzEylül University, Turkey



Serkan Keçeci is a Research Assistant in the Department of History at DokuzEylul University where he has been a faculty member since 2017. He holds a M.A. degree in International Relations (Centre for Russian Studies) from Bilkent University in 2010 and then completed his Ph.D at London School of Economics and Political Science in 2016, with Prof. Dominic C. B. Lieven supervising his dissertation. His research interests lie in the imperial studies –i.e. Russian, Ottoman and Iranian imperial structures, ranging from grand strategy, military diplomacy to geopolitics.

Rear Admiral (R) Cem GURDENİZ
Koç University, Turkey



Admiral Cem Gurdeniz graduated from Turkish Naval Academy in 1979. As a deck officer he served in different in destroyers and frigates. He assumed the Command of guided missile frigate TCG Gaziantep in 1998 and Third Destroyer Division in 2002.

He completed his education in Turkish Naval War College and Armed Forces College in 1989 and 2002 respectively. He holds two masters degrees from US Naval Postgraduate School (1985) and UniversitéLibre Brussels (ULB) (1993) in personnel management and international politics respectively.

He was promoted to the rank of Rear Admiral (lower half) in 2004 and upper half in 2008. He served as the Chief, Strategy and Agreements Department and then the Head of Plans and Policy Division in Turkish Naval Forces Headquarters. As his combat duties, he has served as the commander of Amphibious Ships Group and Mine Fleet between 2007 and 2009 consecutively. He retired in 2012. He founded Istanbul Koç University Maritime Forum in 2015. He still serves as the Director of Maritime Forum. He is lecturer in universities, NGOs as well as weekly columnist in a daily newspaper and monthly columnists in three different maritime magazines and reviews on naval/maritime issues. He is writer of eight books related with maritime strategy, maritime history and maritime culture. He speaks English and French.

Commander Marten MEIJER, Ph.D.
Netherlands Navy, JFC NAPLES, Italy



Marten Meijer (1962) earned a master's degree in Organizational Psychology at the University of Groningen in 1986 and a doctorate in Social Sciences at the Erasmus University in Rotterdam in 1998. From January 2005, commander Marten Meijer served at the NATO Science and Technology Organization in Paris (FRA) as the executive officer of the Human Factors and Medicine Panel.

He was an associate professor at the Faculty of Military Sciences of the Netherlands Defense Academy in Breda, the Netherlands from April 2008. He participated in a field study in ethical decision making in the NATO International Security Assistance Force in Afghanistan in July 2008. He also studied social safety in the Netherlands armed forces and the effectiveness of asymmetrical operations. In January 2011 he was assigned to the NATO Command and Control Centre of Excellence as Branch Chief Expertise Management. He provided feedback to NATO commands in Mons, Belgium, Northwood, Great Britain and Naples, Italy, on the implementation of the NATO Comprehensive Approach in NATO Operation Unified Protector in Libya in 2011 and in NATO Operation Ocean Shield, off the coast of Somalia in 2012. From October 2013 thru July 2017 commander Meijer served as a subject matter expert on NATO Strategic Communication at the NATO Joint Warfare Centre in Stavanger, Norway. He chaired the monthly Joint Warfare Centre Strategic Communication Round Table and was a member of the Joint Warfare Centre Gender Group. In 2014 he received the NATO scientific achievement award for his contributions to a NATO research group on agility in decision making. From October 2016 thru March 2017 he served at the United States Central Command in Tampa, Florida as a strategic communication consultant for the international coalition operation Inherent Resolve, which aims to defeat ISIS terrorists in Iraq and Syria. He was assigned to NATO Joint Forces Command Naples in August 2017 and serves the NATO support mission to the African Union from September thru December 2017. Off duty, he is a dinghy regatta sailor, owner of a former Olympic Class Flying Dutchman (H 303) and a sailing instructor. He married Maria Helena Van Kooten in 1993 and they got a daughter Jantine, 1996, and two sons, Clemens 1995, and Tijmen, 1998.

Dr. Igor DELANOË
French-Russian Analytical CenterObservo, Russian Federation



Dr. Igor Delanoë is Deputy-Head of the French-Russian Analytical CenterObservo (Moscow, French-Russian Chamber of Commerce). He holds a PhD in History from the University of Nice-Sophia Antipolis (France). After having defended his PhD dissertation (2012), he achieved a post-doctoral fellowship within the Black Sea Security Program (John F. Kennedy School of Government, Harvard University) in 2013. In 2014, he worked as a History Lecturer at the French University College of St Peterburg (University Paris 1 – St Petersburg State University) before joining the Analytical CenterObservo in Moscow in 2015 as Deputy-Head.

His primary areas of research interest concern Russian defense and foreign policy issues, Russia's interests in the Mediterranean and in the Middle East, as well as the geopolitics of the Black Sea region. He is a Research Associate at the Center for International and European Studies (Kadir Has University, Istanbul) and at the University of Nice-Sophia Antipolis (Center for Modern and Contemporary Mediterranean Studies; Center for International and European Law). He has acted as a consultant for the French ministries of Foreign Affairs and Defense, for DCAF - Geneva Centre for Security Sector Governance, and for the Center for Humanitarian Dialogue (Geneva).

Mr.Hıdır İlyas KARABIYIK

Ministry of Transport & Infrastructure, Turkey



He was born on 11.09.1981 in Kahramanmaraş. He completed his primary, secondary and high school education in Antakya, at Hatay Primary School and Osman Ötken Anatolian High School. He completed his undergraduate education in the field of Maritime Business Administration in Dokuz Eylül University Maritime Faculty in İzmir between 1999-2003, and completed his master's degrees in Business Administration in KahramanmaraşSütçü İmam University in 2007 and in Maritime Safety and Environmental Management World Maritime University/Sweden in 2012.

After working in the private sector for a while, in 2004 he started to work at the Undersecretariat for Maritime Affairs as an Asst. Pilot. He continues to work in the Ministry of Transport and Infrastructure as a Maritime Expert. He is also a NATO Black Sea Expert under NATO Transport Group Ocean Shipping.

Within the Ministry, the main subjects that he has worked on are port state control, authorization of shipping agencies, cabotage rights, work permits of foreign flagged vessels and foreigners, port entry cards, ro-ro and car carrier ship sectors analysis, maritime logistics, ports role in maritime trade, Transport Council maritime sector coordination, Transportation and Communication Strategy Target 2023, Blue Economy & Development, contribution of the maritime sector to the economy, Maritime Dialogue, Integrated Maritime Policy, international transport corridors and agreements in particular OBOR, Middle corridor, the Caspian Passage, Lapis Lazuli, Traceca, update of the TEN-T Map.He has participated in many national and international trainings, seminars, meetings and panels at the level of participant, educator, speaker and panelist. He is married and has two children.

Assoc.Prof.Burak Şakir ŞEKER
Arel University, Turkey



Assoc. Prof. Burak Şakir ŞEKER is retired Navy Lieutenant, industrial engineer and maritime safety/security expert holding the position of Guest Lecturer at the World Maritime University (WMU)/Sweden, Gazi University, Ankara HacıBayramVeliUniversity and Arel University. His first experience of maritime life came when he was 14 whilst attending Turkish Naval High School.

In his PhD thesis, he developed a novel methodology to solve the Mediterranean jurisdiction areas dispute and its maritime security problems sourced from utilizing multiple international relations theories.

Prior to joining WMU as a post-doc researcher for one year, he worked in Turkish Naval Forces and Turkish Armed Forces HQ between 2007-2017 within the warships, coastal commands and HQ's as a project officer and commander.

He has been involved in some EU funded FP5, FP6 and FP7 projects including “On The MOS Way Network-Motorways of Sea and Safety of LNG Project”, “Go LNG Project”, “Protection Measures for Merchant Ships Project (PROMERC)”.

He has been a member of both Scientific and Organizing Committees of 3 International Conference organized in Sweden. He was honored to be Head of Turkish Armed Forces Delegation as a Representative of Turkish Delegation for Maritime Security Working Group in the IMO Maritime Safety Committee (MCS) held in 2017 in London/UK. He was also awarded with “United Nations Staff Officer Certificate (Peacebuilding Process/Peacekeeping Operations)” by Swedish Armed Forces.

Between 2015 and 2019, he was invited to both aforementioned universities and “Maritime Security Centre of Excellence (MARSEC COE)” to deliver a series of PhD, MA/M.Sc. and BA courses especially on “International Relations, Energy Diplomacy, Post-Cold War Developments, International Political Economy, Law of the Sea and Maritime Security”.

Under varied subtopics of International Relations, his 3 books and 30 articles have been published in many refereed journals or books as a chapter. He has also been as a referee for the “WMU Journal of Maritime Affairs” published by Springer.

Prof.Dr.Demuri DEMETRASHVILI
M.Nodia Institute of Geophysics,
I. Javakhishvili Tbilisi State University, Georgia



Personal information

Date and place of birth: 21/01/1948, Tbilisi
M. Aleksidze str.,1, 0160 Tbilisi, Georgia
Tel: (+99532) 2-333-814 (office);
(+995 32) 2-798-230 (home);
Mob: 995 574 753-218
E-mail: demetr_48@yahoo.com

Education, degrees

2005 – Doctor of Sciences in Physics and Mathematics.
2005 -Certificate on nested-grid modeling of the Black Sea circulation. Training Courses; Sofia, Bulgaria.
1982 - Candidate of Sciences in Physics and Mathematics (analogous to Ph. Doctor degree).
1971 - Physicist, Specialty “Theoretical Physics” (analogous to Master’s degree). I. Javakhishvili Tbilisi State University, Tbilisi, Georgia.

Current position

Since March 2018 till now - Head of the Department of Modeling the Sea and Atmosphere Dynamics of M. Nodia Institute of Geophysics of I. Javakhishvili Tbilisi State University.

Previous experience

1989-2005; 2006-2018–Leading Scientist; Main Scientist. Department of Mathematical Modeling of Geophysical Processes in the Sea and Atmosphere of M. Nodia Institute of Geophysics of I. Javakhishvili Tbilisi State University.
1996-2006 - Head of the Laboratory of Dynamic Meteorology at the Institute of Hydrometeorology of Georgian National Academy of Sciences (Tbilisi). (on a half staff unit).
1993-1995 - Deputy Director of the Republican Center of Environmental Monitoring at the Ministry of Environment Protection of Georgia (Tbilisi).
1992-1993 – The head of the Department of Hydrometeorology and Analysis of Environmental State in the Ministry of Environmental Protection of Georgia,
1977-1982; 1982-1989 – Junior Scientist; Senior Scientist. Trans-Caucasian Hydrometeorological Research Institute (Tbilisi).
1974-1977 – Postgraduate Student. Hydrometeorological Center USSR (Moscow), Computing Center of the Siberian Branch of the Academy of Sciences USSR (Novosibirsk, Akademgorodok).

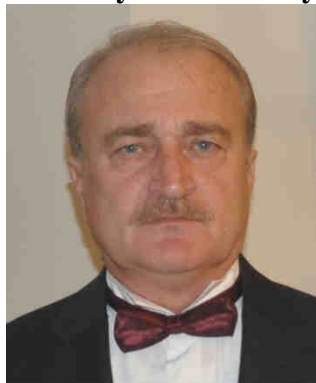
Main Research Interest

Mathematical modeling of hydro and thermodynamic processes in the Black Sea and atmosphere; pollution dispersion processes in the Black Sea. Elaboration of software on the algorithmic language “Fortran” for numerical models.

Awards, Membership of professional Societies

- 2018 - Member of the Editorial Board of the scientific journal “MorskoyGidrofizicheskiyZhurnal” (English-language version is “Physical Oceanography”) of the Academy of Sciences of Russia (Sevastopol).
- 2014 - Member of European Geosciences Union (EGU).
- 2012 - Laureate of M. Nodia prize in Geophysics.
- 2011 - Academician of Georgian Academy of Ecological Sciences.
- 2009- Ocean expert.
- 2008 - National correspondent from Georgia in the International Association for the Physical Sciences of the Oceans (IAPSO) <http://iapso.iugg.org/information/user-profile6/userprofile/DeDe.html>
- 2003 - Medal of Honour of Georgia № 02124
- 1997 - Corresponding Member of the Academy of Ecological Sciences of Georgia.

Prof.Dr. Şükrü Turan BEŞİKTEPE **DokuzEylül University, Turkey**



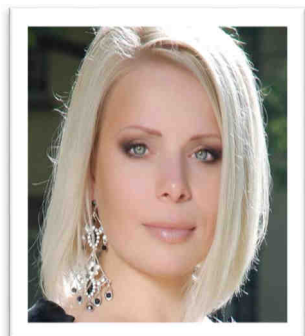
Şükrü Beşiktepe holds a B.S. in physics from Ankara University and a Ph.D. in Physical Oceanography (1991) from the Institute of Marine Sciences of the Middle East Technical University (IMS-METU), Turkey. Dr. Beşiktepe joined IMS-METU as an Assistant Professor in 1991 and was promoted to Associate Professor in 1996. He was a visiting scientist at Harvard University at different times during 1996-2002.

He became Director of IMS-METU in 2002 served as a director till 2007; he had coordinated the Institute’s national and international interdisciplinary activities ranging from oceanographic data base development studies to marine pollution and from development of

ocean observing and prediction system to health of the ecosystem funded by NATO, EU Framework Programmes, Turkish Scientific and Technical Research Council, etc. He worked at NATO Undersea Research Laboratory, La Spezia, Italy as head of the Modeling and Prediction group during 2007-2010 and starting from May 2010, he is a Professor of Physical Oceanography in the Institute of Marine Sciences and Technology of the DokuzEylül University, Turkey.

Dr. Beşiktepe's research interests include combining observations and dynamical models to attain coupled physical and biogeochemical dynamical processes in semi-enclosed seas. Dr. Beşiktepe was Executive Secretary of Black Sea GOOS, collaborating with international organizations active in the Black Sea region and was member of the EuroGOOS and European Marine Observation and Data Expert Group (MODEG), member of the Committee on Capacity Building of Scientific Committee on Oceanic Research. He served as executive secretary of the Executive and Steering Committee of the Navigation, Hydrography and Oceanography Services Plan and Coordination Assembly.

Ms.Iryna MAKARENKO
Black Sea Commission's Permanent Secretariat, Turkey



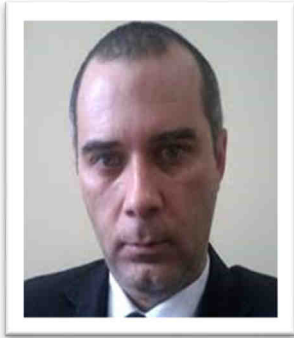
Position :Pollution, Monitoring and Assessment (PMA) Officer

Nationality: Ukraine

Since December, 2010 works at the Permanent Secretariat of the Commission on the Protection of Black Sea Against Pollution (Bucharest Convention), an international intergovernmental organization based in Istanbul, Turkey. Before moving to Turkey worked as a diplomat in the Mission of Ukraine to the European in Brussels, earlier as a Deputy Head of Office to Vice Prime Minister of Ukraine on European Integration and as a diplomat of the Ministry of Foreign Affairs of Ukraine. She has a Master Degree in the field of Environmental and Energy Law obtained at a Faculty of Law of the Catholic University of Leuven (Kingdom of Belgium), Certificates on Water Law (University of Dundee, Scotland), Environmental Diplomacy (University of Geneva, Switzerland) and Regional Economics (University of Genoa, Italy). In April, 2018 was appointed as member of Pool of Experts for UN World Ocean Assessment II Report.

Mr.Georgi TSONEV

Bulgarian Maritime Administration, Bulgaria



+359 897 231 913

georgi.tsonev@marad.bg


<https://www.linkedin.com/in/georgi-tsonev-99b06a97/>

WORK EXPERIENCE

- 10/2017–Present Chief Inspector Bulgarian Maritime Administration, Varna (Bulgaria)
Ports and port activities safety and security inspections and registrations Port and port facilities security assessments and plans
- 04/2014–10/2017 Senior Inspector
Bulgarian Maritime Administration, Varna (Bulgaria)
Ports and port activities safety and security inspections and registrations Port and port facilities security assessments and plans
- 08/2008–04/2014 Inspector
Bulgarian Maritime Administration, Varna (Bulgaria)
Ports and port activities safety and security inspections and registrations Port and port facilities security assessments and plans
- 01/2007–08/2008 Inspector
Bulgarian Maritime Administration, Varna (Bulgaria)
Ports and port activities safety and security inspections and registrations Port and port facilities security assessments and plans
- 12/2004–08/2005 Assistant Officer, Cargo Ship
Stamko SM Co Ltd.
- 06/2002–09/2002 Deck Cadet, STV Kaliakra

Education and Training

- 28/05/2018–01/06/2018 Certificate in Challenges of Securing Maritime Areas for the European Union
European Security and Defence College (ESDC), Varna (Bulgaria)
- 19/12/2017–20/12/2017 Certificate in Port Facility Security
European Maritime Safety Agency (EMSA), Varna (Bulgaria)



03/02/2015–06/02/2015	Certificate in Handling and carriage of dangerous, hazardous and harmful cargoes in packaged and solid bulk form Nikola Vaptsarov Naval Academy, Varna (Bulgaria)
21/02/2011–04/03/2011	Certificate in Port Security APEC - Antwerp/Flanders Port Training Center, Antwerp (Belgium)
1999–2004	MSc Degree, Navigation Officer Nikola Vaptsarov Naval Academy, Varna (Bulgaria) Seamanship, Navigation, Ship Handling and Manoeuvring, Aids to Navigation, Shipping Economy, Radar and Sonar Systems, Safety of Shipping, Maritime English, Cargo Handling and Stowage, Celestial Navigation, and Maritime Law.
1998	68th Special Forces Brigade, Plovdiv (Bulgaria)
1989–1997	High School of Mathematics, Varna (Bulgaria)
1986–1989	SOU Dimcho Debelyanov, Varna (Bulgaria)

Mr. Victor CHERNOV
Ministry of Transport of Russian Federation
Federal Agency for Maritime and River Transport
Marine Rescue Service (MRS), Russian Federation



Victor Chernov is the 1-st Deputy Head of Marine Rescue Service of the Russian Federation.

MRS is the Federal State Budgetary Institution charged with oil spill preparedness and response, search and rescue (SAR) at sea, rendering assistance to the emergency vessels, towing and salvage, underwater technical and diving operations of different purpose, oil spill recovery at sea, oil spill response for oil production platforms and oil-gas exploring, as well as coordinated the activities of other matter of marine environment pollution prevention.

MRS is an organization responsible for practical fulfillment of the Russian Federation obligations under the International Convention on Maritime Search and Rescue, 1979 (SAR-79), and also International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC Convention) and for all International Agreements for SAR and oil spill response in which the Russian Federation is a part.

Victor Chernov graduated from Novorossiysk Higher Engineering Marine Academy on "Navigation on the Shipping Routes» specialty in 1987.

1987 - 1994 - he began to work on position of the deck officer and achieved the position of the captain (Master mariner) in the Novorossiysk Shipping Company ("Novoship").

1995 - 2001 - he was pilot, chef-pilot of Novorossiysk pilot station and subsequently from 2001 to 2004 – Head of Novorossiysk pilot station.

2005 - 2006 - he was Director of operations of the offshore terminal.

2007 – 2011- the Head of the MRCC Novorossiysk.

In 2011, he was appointed to the position of the Head of State MRCC/Deputy Head of MRS (Moscow).

In 2015, he was appointed to the position of the 1-st Deputy Head of Marine Rescue Service of the Russian Federation.

Victor Chernov has huge practical experience in organizing and conducting of SAR and Oil spill response operations and exercises as well as disaster relief and salvage operations.

Victor Chernov's awards include the medal «Soviet Union Fleet Admiral Kuznetsov» (1998), gratitude of Federal Agency of Maritime and River Transport of Russian Federation (2007) and of Ministry of Transport of Russian Federation (2009), regional public recognition award - «Person of the Year-2010», the medal of Russian Emergencies Ministry «The Commonwealth the Sake Saving» (2011) and honorary badge «Honorary worker of Maritime and River Transport» (2014).

Victor Chernov was born in 1964 in Saransk, Russian Federation. He is married. He has one daughter.

Assoc.Prof. Sercan EROL
Karadeniz Technical University, Turkey



Assoc.Prof.Sercan EROL was born in 1983 in Trabzon. He graduated from Trabzon High School in 2000 and from the Faculty of Economic and Administrative Sciences of Karadeniz Technical University in 2005. He started to work as a lecturer in KTU Marine Transportation and Management Engineering Department. EROL, completed his master's degree in marine accidents and insurance, and worked on maritime economics and finance in his doctoral studies. He has national and international publications on his research topics. He is currently working KTU Marine Transportation and Management Engineering Department. In addition to his academic activities, Erol was also interested in mountaineering and served as Club President and Federation Provincial Representative of Turkey. Erol already has been working Executive Board Member of Turkish Mountaineering Federation. He is married and has 2 children.

Field of study:

- Marine Accidents and Insurances
- Maritime Law
- Maritime Economics

Some publications

- Erol S., Demir M., Çetişli B. ,Eyüboğlu E., "Analysis of Ship Accidents in the Istanbul Strait Using Neuro-Fuzzy and Genetically Optimised Fuzzy Classifiers", JOURNAL OF NAVIGATION, vol.1, no.1, pp.1-18, 2017
- Erol S., "Calculation of the freight revenues in Turkey-focused maritime transportation", MARITIME POLICY & MANAGEMENT, vol.44, pp.815-824, 2017
- Uğurlu Ö., Erol S., Başar E., "The analysis of life safety and economic loss in marine accidents occurring in the Turkish Straits", MARITIME POLICY & MANAGEMENT, vol.43, pp.356-370, 2016
- Erol S., Başar E., "The analysis of ship accident occurred in Turkish search and rescue area by using decision tree", MARITIME POLICY & MANAGEMENT, vol.42, pp.377-388, 2015
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Azime TELLİ, Ph.D.
Mersin University, Turkey



Azime Telli graduated from Ankara University, Faculty of Political Sciences, Department of Public Administration in 2000. She made MA in Political Science and Public Administration. She completed her PhD at Kocaeli University, Institute of Social Sciences, Department of International Relations. She researched energy diplomacy in the Caspian Basin as a PhD thesis. She was a guest researcher at the Center for Strategic Studies of the President of Azerbaijan for PhD thesis. Her PhD thesis was publicized with the title “Energy Diplomacy in the Caspian Basin: Cooperation and Rivalry”. She has specialized in the field of energy policy, energy security and energy diplomacy. She has many publications in her field internationally and nationally. She has been working as an assistant professor at Mersin University from 2017.

Mr.Cahit İŞCEN

Ministry of Culture and Tourism, Turkey



Cahit İŞCEN is a Culture and Tourism Expert in the Department of Maritime Tourism of the General Directorate of Investments and Enterprises at the Ministry of Culture and Tourism. He graduated from Kocatepe University, Faculty of Economics and Administrative Sciences in 1987 and received Master’s Degree in Global and Regional Studies from Ankara University in 2018. He also has completed the European Union and International Relations Specialization Program in Ankara University. After his military service between 1987-1988 as sublieutenant, he started to work in the Ministry of Culture and Tourism in 1992. Between 1994 and 2004, he worked as Chief and Branch Manager in the Travel Agencies Department. Between 2004-2008 he started to work as Branch Manager in the Coordination and Strategic Planning Department of the Ministry. In 2008, he was appointed as Culture and Tourism Attache to Tehran/İran and served as the Cultural and Tourism Attaché of Turkey between 2008 and 2012 in Tehran/İran. In 2012, after completing his mission abroad and returning to the country, he continues to work as Culture and Tourism Expert at the Ministry of Culture and Tourism.

Telephone:0312 470 7187

Mobile:0536 677 9858

e-mail: cahit.iscen@kulturturizm.gov.tr



ABOUT MARSEC COE

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be achieved through working together with national, regional and global maritime security organizations as well as civilian agencies.

There are numerous national, regional and global maritime security related initiatives around the globe. UN, NATO, IMO and EU are among these global maritime security stakeholders.

Turkey has a big potential in terms of transportation since she is at the crossroads of Europe, Central Asia and Middle East. The geo-strategic position of the country has been rendered with comprehensive and strategic studies and Turkey has acquired an identity as an 'Energy Corridor'.

The idea of establishing a MARSEC COE stemmed from the coordination requirement among government, private sector, industry and academies in order to get a more secure maritime environment in our region. In accordance with NATO's smart defense approach, Turkey decided to coordinate and unite the efforts in a center of excellence acting as a hub for maritime related issues.

With this aim, on 12 November 2012, the Multinational Maritime Security Centre of Excellence (MARSEC COE) was officially inaugurated in Aksaz Naval Base - Marmaris/TURKEY, under the command of Turkish Naval Forces Southern Task Group Command. This institution was established as an outcome from the 'Smart Defense' initiative and aimed at Supporting Allies' security interests by working on 'Maritime Security' in the surrounding seas. Due to its proximity to the international airports, universities and maritime industry, The Multinational Maritime Security Centre of Excellence was relocated to Beylerbeyi/ISTANBUL in January 2017 and then in March 2018, the center moved to its present location at the Multinational Joint Warfare Centre building in the National Defence University Campus, Yenilevent/ISTANBUL

MARSEC COE is a center for academic research as well as a (multinational) hub for practical training in the field of maritime security, along with relevant domains (Maritime

Trade, Energy Security, Maritime Environment, Maritime Resources, Public Health, Maritime Transport-Logistic). MARSEC COE strives to achieve the necessary collaboration among stakeholders from government, industry, academia and private sectors.

Through the way of becoming a NATO Accredited Center of Excellence (COE); MARSEC COE, as a framework nation, after several coordination visits and meetings and also inputs of NATO Allied Command Transformation (ACT), Allied Maritime Command (MARCOM), Combined Joint Operations from the Sea Centre of Excellence (CJOS COE) and Centre of Excellence for Operations in Confined and Shallow Waters (COE CSW); conducted the first establishment conference on 04-07 February 2019 and the second establishment conference on 6-9 May 2019, and have finalized MARSEC COE concept together with Operational and Functional Memorandum of Understanding (MoU)s with consensus of all participants. Greece and Romania declared their intentions as sponsoring nations for NATO MARSEC COE and MoU signing ceremony was held with the participation of Turkey as a framework nation, Romania, Greece as sponsoring nations and ACT on 18 October 2019.


Mission

The mission of the MARSEC COE is to expand the capabilities of NATO and Partner Nations by providing comprehensive innovative and timely expertise in the field of Maritime Security Operations.

Vision

MARSEC COE is to become an internationally recognized focal point as well as comprehensive expertise and knowledge provider in the area of maritime security, thus expanding capabilities of NATO and Partner Nations.

<p>MARSEC COE</p> <p>Yenilevent, Istanbul / TURKEY</p> <p>InNationalDefenceUniversityCampus</p> <p>Phone : +90 212 398 01 00</p> <p>Internal: 5893</p> <p>info.marseccoe@dzkk.tsk.tr</p>
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SYMPOSIUM PROGRAMME

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Thursday, 27 June 2019

Symposium Opening Session		
TIME	EVENT	SPEAKER
09:15 09:45	Registration	
09:45 10:00	Admin Brief and MARSEC COE Clip	
10:00 10:10	Welcome Speech	Capt.(N) Sümer KAYSER
10:10 10:30	Opening Remarks	Commander of Turkish Naval Forces
10:30 10:50	The Black Sea from Historical Perspective	Serkan KEÇECİ, Ph.D.
10:50 11:30	Photo Session and Coffee Break	
11:30 11:50	International Black Sea Maritime Festival	Radm. (R) Cem GÜRDENİZ
12:00 13:30	Lunch (Buffet)	

Thursday, 27 June 2019

PANEL I- TRANSPORTATION & SECURITY		
Moderator Prof.Dr.Mitat ÇELİKPALA (Kadir Has University)		
Panel Coordinator Cdr. Sul Khan EVGENIDZE		
TIME	EVENT	SPEAKER
13:30 14:10	Montreux Convention and Sea of Peace: “The Black Sea”	Cdr.Marten MEIJER, Ph.D. Igor DELANOË, Ph.D.
	Montreux Convention and Sea of Peace: “The Black Sea” (Turkish Perspective)	Prof.Dr.Mitat ÇELİKPALA
14:10 14:30	Overview of The Black Sea Economy	Mr.Hıdır İlyas KARABIYIK
14:30 14:50	The Black Sea Energy Routes and Their Effects over Maritime Transport	Assoc.Prof.Burak Şakir ŞEKER
14:50 15:10	Climate Change and Maritime Trade Relationship: Its Effect over The Black Sea	Prof.Dr. Demuri DEMETRASHVİLİ
15:10 15:20	Coffee Break	

SYMPOSIUM PROGRAMME

Thursday, 27 June 2019

PANEL II– OCEANOGRAPHY & ENVIRONMENT		
Moderator Prof.Dr.Gülşen ALTUĞ (Istanbul University)		
Panel Coordinator Cdr. Sulkhan EVGENIDZE		
TIME	EVENT	SPEAKER
15:20 16:10	Oceanography of The Black Sea	Prof.Dr.Şükrü Turan BEŞİKTEPE
16:10 16:30	Fighting against Maritime Pollution in The Black Sea	Ms.Iryna MAKARENKO
16:30 16:50	Q & A	
20:00 22:00	Hosted Dinner at Beylerbeyi Officers' Club	

Friday, 28 June 2019

PANEL III – MARITIME ACCIDENTS & SAR		
Moderator Prof.Dr.Çağrı ERHAN (Altınbaş University)		
Panel Coordinator Lt.Cdr.Ruslan KHALIYEV		
TIME	EVENT	SPEAKER
09:30 09:50	Disaster Relief and Maritime Assistance in The Black Sea (Bulgarian Approach)	Mr.Georgi TSONEV
09:50 10:10	Disaster Relief and Maritime Assistance in The Black Sea (Russian Approach)	Mr.Victor CHERNOV
10:10 10:30	Analysis of Maritime Accidents in The Black Sea and Search & Rescue	Assoc.Prof. Sercan EROL
10:30 10:50	Coffee Break	

SYMPOSIUM PROGRAMME

Friday, 28 June 2019

PANEL IV –ENERGY SECURITY & TOURISM		
Moderator Prof.Dr.Hasret ÇOMAK (Arel University)		
Panel Coordinator Lt.Cdr.Ruslan KHALIYEV		
TIME	EVENT	SPEAKER
10:50 11:10	Black Sea Energy Security	Azime TELLİ, Ph.D.
11:10 11:30	Maritime Tourism in the Black Sea, Yachting and Marinas	Mr.Cahit İŞCEN
11:30 11:50	Coffee Break	
11:50 12:00	Q & A	
12:00 12:30	Closing Remarks	
CULTURAL PROGRAMME		
12:30 13:30	Naval Museum Tour	All participants
13:30 15:30	İstanbul Strait Boat Tour	Departure from Naval Museum (Lunch box)