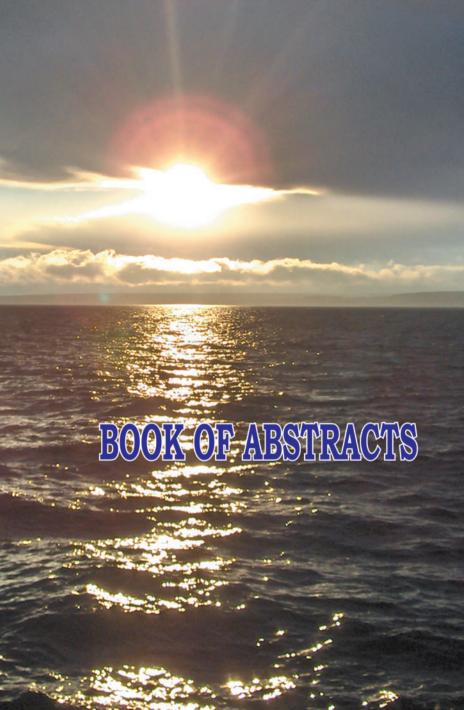


# MARINE RESEARCH HORIZON 2020

17-20 SEPTEMBER 2013, VARNA, BULGARIA





## INTERNATIONAL CONFERENCE

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17-20 SEPTEMBER 2013 VARNA, BULGARIA

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- 3. Improving governance, management and building capacities
- 4. Extending the Euro-Argo activities in the regional seas Black Sea Argo initiative
- 5. Marine resources and observations for sustainable ecosystem management
- 6. Achieving marine resources and ecosystem management and sustainability
- 7. EMODNET
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- 8. Black Sea ARGO workshop
- 9. Regional Seas

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- 10. PERSEUS Black Sea experiment

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## ATMOSPHERIC INPUT OF POLLUTANTS – OPPORTUNITY FOR INNOVATION

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For about a century oceanographers have tried to understand the budgets and processes associated with both natural and human-derived substances entering the ocean. Much of the early work focused on the most obvious inputs, those carried by rivers and streams. Later studies investigated sewage outfalls, dumping, and other direct input pathways for pollutants. Over the past decade or two, however, it has become apparent that the atmosphere is also not only a significant, but in some cases dominant, pathway by which both natural materials and contaminants are transported from the continents to both the coastal and open oceans. These substances include mineral dust and plant residues, metals, nitrogen compounds from combustion processes and fertilizers, and pesticides and a wide range of other synthetic organic compounds from industrial and domestic sources.