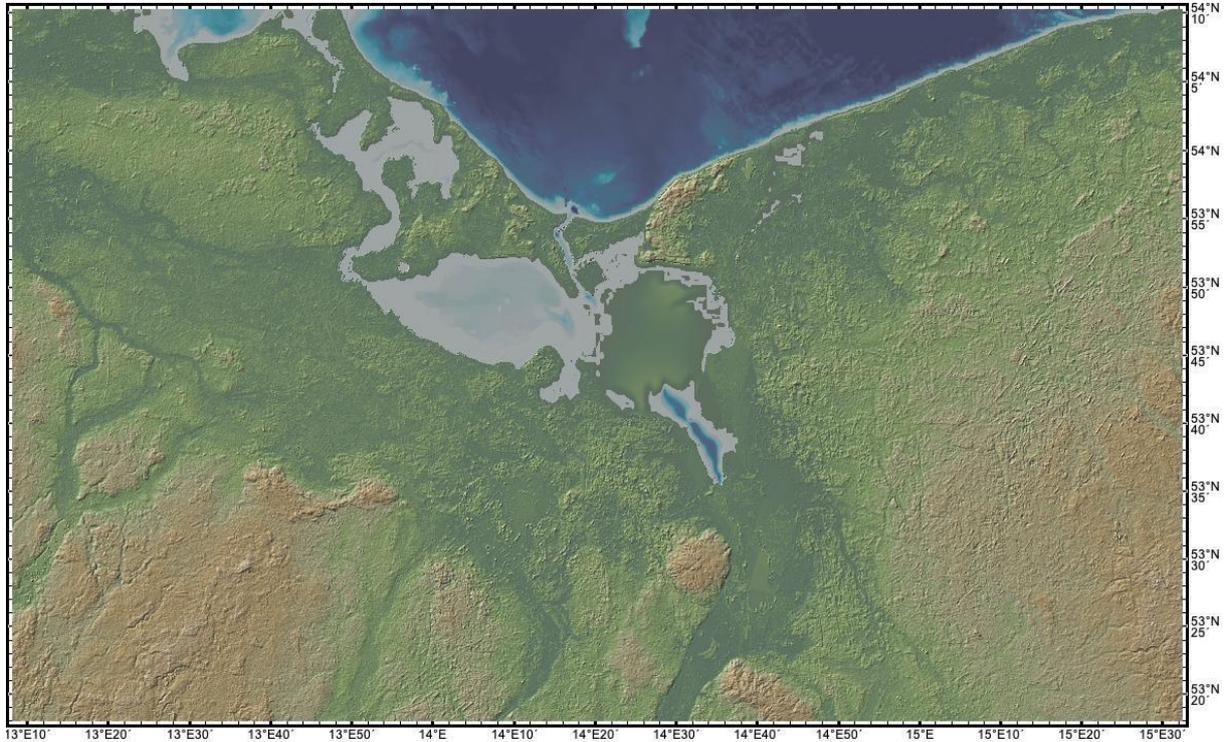


River Mouth Systems and Marginal Seas – Natural Drivers and Human Impacts

Online conference, Dec 5-7, 2022

2nd Announcement



Oder River mouth system, southern Baltic Sea

Open call for abstracts until 7 November 2022!

Representatives of scientific disciplines working on the complexity of processes in river mouth systems and marginal seas, e.g. earth and life scientists, climatologists, archaeologists, historians, socio-economists, modelers and IT specialists, are invited to our online conference to jointly discuss the effects of climate change and anthropogenic activities in the area of densely populated river mouth systems on the marine and coastal environment. Oral contributions are welcome!

Rationale

River mouths such as deltas, coastal embayments and estuaries form the gateways from the continents to the oceans, which have been attractive for people to settle along the coastal zones over the long period of human settlement history. The natural environment of marginal seas and their coastal zones are increasingly threatened by climate change induced rising sea-level, floods, storms, tsunamis, coastal erosion and anthropogenically induced environmental hazards. To mitigate the threats effective strategies for sustainable development of the coastal zones have to be elaborated.

Since 2020, an international initiative promoting Marginal Seas Research has been launched within the frame of the Deep-time Digital Earth Program (DDE) of the IUGS. The mission of the initiative is the development of a general strategy for describing the processes in

marginal seas holistically as an interaction between geo-, ecosystem, climate and socioeconomic systems at the zone of transition between continents and oceans. Within the frame of this initiative, comparative studies of marginal seas' functionality are fostered in order to contribute to generalized concepts of sustainable management of the marine and coastal environment of marginal seas in different climatic zones and geological-tectonic settings.

To study the interrelation between natural and anthropogenic drivers exemplarily it is planned to promote targeted research for a deeper understanding of the river mouth systems' development from the pristine past to the anthropogenically dominated present.

The complexity of the processes to be studied requires research teams made up of earth and life scientists, climatologists, archaeologists, historians, socio-economists, modelers and IT specialists. Representatives of these disciplines are invited to the conference to jointly discuss the effects of climate change and anthropogenic activities in the area of densely populated river mouth systems on the marine and coastal environment. Thus, the time span of the processes to be examined must range from the pristine status through early human settlements to the industrialized epoch of the present day of the river estuary systems. From this discussion, recommendations for the development of general numerical models to manage river mouth systems for their sustainable development are expected.

Abstract submission deadline is 7 November 2022 (see Call for papers section below).
Registration deadline is 1 December. Registration will be open latest when the programme has been published. Registered participants will receive a zoom link shortly before the conference. Conference language is English.

Topical Sessions

Session 1

Climate change and River mouth systems

In this session, general questions about the role of climate change and related sea level rise, frequency and direction of storm events and their role as driver of the dynamics of the river mouths and related coastal systems shall be discussed. To what extent can climate models help for future projections of this dynamics and the frequency of coastal hazards? Theoretical approaches and practical experiences to answer these and related questions are welcome.

Session 2

Human activities and environmental impacts from the past to the future

The socio-economic conditions of the gateways between continents and oceans have always attracted people to use and shape these habitats. The historical reconstruction of these processes and the description of their current dynamics are irreplaceable for the design of future balancing economic use and preservation of natural environment. The participation of geoscientists and life-scientists, historians and archaeologists, socio-economists, engineers and modelers in the discussion of these questions is expressly encouraged.

Session 3

Proxy-records and modern observations

Data sets need to describe not only the current functionality of river mouth systems but have to include the history from the pristine paleo-environment to the current anthropogenically impacted regime. The time spans to be represented by data are trending from millennial to the seasonal scale. The records include paleo-data - derived by "decoding" of sedimentary proxies - to current monitoring and data measured in real-time. The interpretation of proxy data demands a cooperation between geoscientists, climatologists, historians and

archaeologists. The identification of the onset of human effects on the environment and its future projection are needed preconditions to foster strategies for sustainable development of industrialized coastal embayments and estuaries to be discussed.

Session 4

Advanced data management and modeling

One target of the conference is to contribute to the comparison of river mouth systems on the global scale based on standardized data, numerical models and methods of AI and ML. This standardization can help to provide generalized concepts for sustainable development of river mouth systems to balance the protection of their environment and the economic use of their resources. The focus on harmonizing and processing of interdisciplinary data on the disciplinary scale between natural sciences, socioeconomics, archaeology and technical sciences requires transdisciplinary data management and modeling approaches. This data integration based on the FAIR principle (Findable, Accessible, Interoperable and Reusable) will be discussed in this session.

Call for Papers

You are invited to send an abstract for an oral presentation for one of the sessions specified above, by 7 November 2022. An abstract booklet will be published prior to the conference.

Authors are advised to send an abstract (see template download below) of up to one page (max. 500 words) to balticearth@hereon.de by the deadline of 7 November 2022.

Authors are advised to download and use the abstract template (.docx or .odt.) provided on the conference website. In the template, please indicate to which session you would like your contribution to be assigned (may be changed by the Conference Committee).

<https://baltic.earth/rivermouthsystems2022>

Please note that the abstract will be reviewed by the Conference Committee, and those abstracts will be selected for oral presentation that are relevant for the conference scope and meet the scientific standards. The committee will set the time for presentations so that parallel sessions are avoided.

Registration

Interested participants must register online here via the registration link which will be provided here when registration is open. Registration will be open latest when the programme is available (28 November 2022), presumably earlier in November. Registration deadline is 1 December 2022.

Registered participants will receive the zoom link for online participation shortly before the conference.

Publication

A publication of research papers of the presentations is planned as a Special Issue of an internationally acknowledged scientific journal.

Patronate

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International Baltic Earth Secretariat at Helmholtz Zentrum Hereon

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DDE Marginal Seas Task Group

(the conference will serve as the 5th Marginal Seas Expert Meeting of the DDE Marginal Seas Task Group)

Guangzhou Marine Geological Survey / China Geological Survey

Leibniz Institute for Baltic Sea Research

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Time line

1st Announcement: Oct 11, 2022

2nd Announcement: Oct 22, 2022

Abstracts due: Nov 7, 2022

Final program: Nov 28, 2022

Registration open latest: Nov 28, 2022

Registration deadline: Dec 1, 2022

Conference: Dec 5 to 7, 2022