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Multiple drivers for Earth system changes in the Baltic Sea region

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Clockwise from top left: Wind parks, fishermen and industry near Copenhagen, Denmark; corn fields on Als, Denmark; old diesel pump at Hesnæs yacht and fishing harbor, Denmark; ferry, power plant and maritime industry, Rostock harbour, Germany; crowded beach on Rügen, Germany; cattle on the shore, Saaremaa, Estonia.



Baltic Earth Workshop on

Multiple drivers for Earth system changes in the Baltic Sea region

Tallinn University of Technology, Tallinn, Estonia

26-27 November 2018

Co-organized by Helmholtz-Zentrum Geesthacht,
Leibniz Institute for Baltic Sea Research Warnemünde
and Tallinn University of Technology
in collaboration with BONUS, HELCOM and ICES



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SCIENCE FOR A BETTER FUTURE OF THE BALTIC SEA REGION



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Poster 19

The modern calculating characteristics of the maximum runoff at the Wisla River within Ukraine

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The Wisla River Basin in Ukraine is represented by a rather small part of the territory and consists of two sub basins - the Western Bug and San. Nevertheless, the water resources of the Western Bug River are used not only by Ukraine, but also in Poland and Byelorussia. Therefore, the study of the most rich-water phases of the water regime of the rivers of the Wisla River Basin (spring and rain floods) is an urgent task for further recommendations on the rational environmental management in the study area.

For time series of maximum water discharge spring and rain floods at the rivers of study area calculated statistical characteristics of the method of moments and the maximum likelihood. In the context of regional and global climate change, it is necessary to explore possible trends in the characteristics of the runoff of rivers in its various phases. On the example of the Wisla River, it is shown that the characteristics of the runoff of spring water and rain floods have virtually no significant trends, but it should be noted that at individual stations there is a decrease in the maximum water discharges. The obtained the 1% probability values of maximum water discharges of spring and rain floods were compared. The discharges $Q_{1\%}$ during the spring flood is 27% higher than the maximum discharges of rain floods. Nevertheless, in some cases, discharges of rain floods can to exceed the discharges of spring floods. Thus, the actual task of designing dams at the Wisla river basin is the development of reliable scientific and methodological recommendations for determining the characteristics of the maximum runoff of the rare probability of excess both for spring water and rain floods.

Poster 20

Shipping and the environment in the Baltic Sea region - results of the BONUS SHEBA project

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The BONUS SHEBA project - running from 2015 to 2018 - brought together lead experts from the fields of ship emissions, atmospheric, acoustic and oceanic modelling, atmospheric and marine chemistry, marine ecology and ecotoxicology, environmental eco-nomics, social sciences, logistics and environmental law in order to provide an integrated and in-depth analysis of the ecological, economic and social impacts of shipping in the Baltic Sea. Here some highlights of BONUS SHEBA's results generated over the past years are presented.