



## **Relict seabed morphological features as evidence of catastrophic sea-level changes in the Baltic Sea during the Late Pleistocene - Holocene**

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The Baltic Sea was formed after the last glacial maximum when the Scandinavian Ice Sheet retreated. That was accompanied by significant sea-level oscillations and hydrological regime changes and also by development of various seabed morphological features as result of sediment erosion and deposition. The South-Eastern Baltic Sea is characterized by presence of unique subaquatic features, formed during Late Pleistocene to Holocene. In 2014-2018 high quality bathymetry and acoustic profiling surveys were conducted with seabed sediment grabs and AMS dating of mollusk shells in sediment cores aimed to allocate and date these features.

Location of relict submerged seacoast cliffs was specified. The cliffs are valuable resource of information about geological processes of ancient shore formation. Age of the cliffs was estimated on base of correlation of the depth at the cliffs foot and relative sea-level curve (Uscinowicz, 2006). Good preservation of the underwater cliffs indicates the catastrophic sea-level changes in the Baltic realm during the Late Pleistocene to the Holocene.

New data on relict subaquatic dunes were obtained. These early known dunes previously were not investigated enough. There are still a lot of questions about their age and processes of formation. Existence of the submerged dune sand massifs is also an evidence of rapid sea-level changes.

For the first time we discovered numerous iceberg ploughmarks on the seafloor of the South-Eastern Baltic Sea. The ploughmarks trajectory analysis reveals special aspects of the basin circulation during the Late Pleistocene to the Early Holocene. Some specific geomorphological features, as wide depressions at the end of ploughmarks, may indicate sharp dropping of water level during early stage of the Baltic Sea.

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