Geophysical Research Abstracts
Vol. 19, EGU2017-840, 2017
EGU General Assembly 2017

Benthic Foraminiferal Distribution in the Baltic Sea as Indicator of the North Atlantic Water Inflow

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The Baltic Sea is a brackish water land-locked sea, with a strongly stratified water column and restricted exchange of bottom water. The hydrological regime of deep waters is strongly influenced by irregular inflows of high-saline Atlantic water through the Danish straits. For the present study 22 surface sediment samples were collected in the Russian sector of the Baltic Sea with sediment grab OCEAN during the 131^{st} cruise of the R/V Professor Shtokman (March–April 2016). Water salinity was measured by Sea&Sun CTD 90M. Benthic foraminifera were counted and identified in the >63 μm size fraction. A total of 25 species were identified. Agglutinated species are the most abundant in the assemblages. They are represented by 18 species which belong to *Saccammina sphaerica*, *Crithionina* and *Thurammina* taxa. Genera of calcareous species *Cribroelphidium* and *Melonis* are extremely rare in the study area, except for the station showing the highest salinity value (Gdansk Basin) where these species are relatively abundant in the association. Single tests of planktonic foraminifera were also found at some stations. Distribution of benthic foraminifera demonstrates a clear correlation with salinity of the bottom waters and the topography of the region. Maximum foraminifera concentrations as well as increase in faunal diversity correspond to the deeper parts of the study region where saline North Atlantic water flowing via Stolpe Furrow is accumulated. In the Gdansk Basin, it is even possible to trace the direction of the saline water inflow by simultaneous decrease in salinity, as well as foraminiferal tests and species concentrations with increasing distance from the Stolpe Furrow.