



Variability in planktonic community caused by sub-mesoscale eddies and spatial features of the Baltic Sea coast

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Our study examines the features of photosynthetic processes that occurred in the coastal area of the south-eastern Baltic Sea during the advanced phase of intensive summer bloom of 2018. We aim for a better understanding of short-time variability in primary production coupled with planktonic composition and phytoplankton functional activity in relation to location of nutrients sources on the coast and sub-mesoscale eddies, which appear over the coastal slope of Cape Taran and move alongside the Sambia Peninsula coast. These two-day studies, conducted on board of research vessels, represent a snapshot of a highly variable ecosystem alongside the Sambia Peninsula and Curonian Spit at the end of summer. Satellite images of sea surface temperatures and chlorophyll «a» concentration were also used for identification of spatial variations and eddies; the circulation conditions were derived from the operational system SatBalyk. Across the coastal area, the effects of physico-chemical conditions influenced the phytoplankton composition and photosynthetic activity. In the south, the hot weather as well as the impacts of the Vistula Lagoon and the Amber combine affected the increase of nutrients and caused the strongest cyanobacterial bloom. In the Cape Taran area, the plankton community was transformed as a result of sub-mesoscale eddies development. Substantial gradients of nutrients, composition, biomasses and functional activity of phytoplankton along transects through eddies field was shown.

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