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Determinig what factor techno or geogenne cause magnetic and geochemical anomalies tracks estuary of the Vistula river to the Baltic Sea

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Environment pollution, and water ecosystems in particular, poses a meaningful problem in a global scale. Seas and oceans territories are the receivers of all organic and non-organic substances, such as heavy metals, nutrients and oil derivatives. These dangerous substances accumulate in bottoms, especially in the littoral zone. Therefore it is extremely important to determine the sort and quantities of substances brought into the seas directly with the river waters and the influence which these have upon marine ecosystems. The results of this study is to determine the scale of changes in terms of the quality of Gdansk Bay bottoms located in the estuary area of the Vistula River, with the usage of modern magnetic techniques. The samples of sediments and soils were subjected to magnetic analysis, i.e. the measurement of magnetic susceptibility by means of MS2 Barington, the magnetic susceptibility gauge equipped with magnetic detectors MS2B or MS2F, and chemical analysis, i.e. examination of heavy metals. The magnetic techniques is rely upon the measurement of low-field and specific magnetic susceptibility, as well as upon calculated frequency correlation between magnetic susceptibility and the constitution of heavy metals and oil-derivative substances in the samples of examined sediments and soils. Based on the studies, was defined the impact of techno or geogenic factors in the sediments of the Vistula River estuary zone based on the characteristics of an easy to measure geophysical gauge of marine environment pollutions, which thus can be widely ractised in seas and oceans monitoring.

Biography

Leszek Leczynski is an Associate Proffesor in Geology (applied geology and marine geology); he is the Head of the Laboratory of Applied Geology, Department of Marine Geology, Institute of Oceanography. He is the Vice-President of the Polish Polar Consortium. His area of research includes: Lithodynamics of coastal seas and oceans, the modeling of coastal zone morpholithodynamical processes, geophysical methods in marine geology, geological documentation of the sedimentary structures and archeological objects on the seabed. He has participated in a scientific expedition Spitsbergen in the years 2011, 2012, 2015. He has published more than 50 papers.

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