

Early Oceanographical Data Collected by the Institute of Oceanography, University of Gdańsk

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Abstract

Three data sets entitled Water currents in Głębinka Passage in late spring of 1975, Hydrometeorological and hydrochemical conditions in the Gulf of Gdańsk in the vicinity of Vistula river mouth in July of 1977, and Gulf of Gdańsk monitoring conducted by the Institute of Oceanography, University of Gdańsk, in 1981–1994 contain archival field measurement results from the Gulf of Gdańsk (the southern Baltic). The data can be used for the assessment of the long-term changes in the marine coastal environment and for validation in retrospective modelling.

Keywords: archival data, field measurements; seawater properties; meteorological conditions; Gulf of Gdańsk

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Specification table (data records)

Subject area	Physical and chemical oceanography, Meteorology
More specific subject area	Field measurements of seawater properties and meteorological parameters
Type of data	Text
How the data was acquired	The data was collected at the Institute of Oceanography, University of Gdańsk, with standard oceanographical and meteorological measurement devices used in fieldwork
Data format	The tables are in .xlsx format

Experimental factors	The data contained in the dataset were not processed
Experimental features	Water sampling, direct measurement in the field, laboratory analysis
Data source location	MOST Wiedzy Open Research Catalog, Gdańsk University of Technology, Gdańsk, Poland
Data accessibility	The datasets are accessible and are publicly and freely available for any research or educational purposes

Background

In 1974, when the Institute of Oceanography at University of Gdańsk (IO UG) acquired its first hydrographic research vessel, field works in the coastal waters of the Gulf of Gdańsk (the southern Baltic) started. The non-biological research was mainly focussed on the water temperature and salinity variability, local sea current patterns, biogenic substances as well as the oxygen content in the water and meteorological observations. The results obtained in the 1970s concerned the interaction between waters of different origin, e.g. in the vicinity of the Vistula river mouth or in the Głębinika Passage connecting shallow and deep parts of Puck Bay (sub-area of the Gulf of Gdańsk). After the first experiences were gained, the Institute of Oceanography initiated multiannual monitoring of the coastal waters of the Gulf of Gdańsk, which was conducted in 1981–1994.

Methods

Oceanographical and meteorological parameters were measured at the sampling stations whose locations depended on the aim and area of study. Standard methods of measurements in the marine sciences were used. Water samples taken in the sea were transported to the laboratory and then analysed. Before 1985, in situ water salinity was determined with the use of Knudsen's chemical definition adapted for the Baltic Sea waters (Trzosińska, 1977) and after this year, by means of water conductivity measurements according to the recommendation of UNESCO (1981). Similarly, about 1985, the oceanographic reversible thermometers were replaced by electronic ones. During field campaigns, the following measurement devices were used: water samplers, including a Nansen water sampler equipped with a reversible thermometer; BPW-2 current meters; a white disc of 0.3 m in diameter (Secchi disc) for determining water transparency; CTD (conductivity-temperature-depth) automatic probes (a probe constructed in the Laboratory of Oceanographic Equipment at IO UG went into use in 1985 and a probe bought from Meerestechnik GmbH went into use in 1990); transmissometer constructed in the Laboratory of Oceanographic Equipment (IO UG) for determining the light-beam attenuation coefficient of green light (535 nm), anemometer, and psychrometer. A detailed description of the measurement methods can be found in the manuscripts of Pęcherzewski et al. (1977), Nowacki (1980) and e.g. Nowacki et al. (1986).



Data quality and availability

Oceanographic data were digitalised based on original measurement protocols. During this process, they were verified and they were excluded in the case of any doubt with respect to their quality.

Datasets DOI

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References

- Nowacki, J. (1980) '*The role of submerged strait in water exchange in Puck Bay*' (in Polish) Ph.D. thesis, Institute of Oceanography, University of Gdańsk, pp. 115.
- Nowacki, J. et al. (1986) '*Research on hydrology and hydrochemistry of the Gulf of Gdańsk in 1986*' (in Polish) Dept. Phys. Ocean., Institute of Oceanography University of Gdańsk, manuscript, pp. 45.
- Pęcherzewski, K. et al. (1977) '*Hydrometeorological and hydrochemical conditions in the marine area near Vistula river mouth*' (in Polish) Dept. Phys. Ocean., Institute of Oceanography University of Gdańsk, pp. 57.
- Trzosińska, J. (1977) 'Basic ionic composition of Baltic water. Baltic water, its composition and properties' (in Polish), *Studia i Materiały Oceanologiczne*, 17, pp. 165–180.
- UNESCO (1981) 'Background papers and supporting data on the practical salinity scale 1978', *UNESCO Technical Paper in Marine Science*, 37, pp. 145.