

**Zastosowanie własności magnetycznych osadów dennych zatoki  
Nottinghambukta do jakościowej analizy egzaracji lodowca Werenskiolda  
(SW część Ziemi Wedela Jarlsberga, Spitsbergen).**

**Magnetic properties of bottom sediments of the Nottinghambukta as a tool  
to qualitative analysis of exaration of the Werenskiold Glacier (SW part of  
Wedel Jarlsberg Land, Spitsbergen).**

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The main objective of the PhD thesis is the use of magnetic properties of glacial and marine sediments to track transport and deposition of the mineral material released from the ice masses during Werenskioldbreen recession. The magnetic properties of sediments are directly associated with the origin of detrital material and could be diversified depending on composition of the magnetic minerals directly related to the type of rock, especially iron compounds. It allows to recognize source of sediments. Surface sediment samples have been taken from the Nottinghambukta and recently uncovered bottom sediments of the Werenskiold Glacier foreland.

Grain size distribution results showed that, silty sands dominate in investigated area (based on the Udden-Wentworth scale). Less importance have clear sand and sandy silt with a share of 23% and 13%, respectively.

Magnetic mineralogy of samples evaluated by magnetic susceptibility dependence on temperature experiments, showed magnetite or pyrrhotite with magnetite as a main magnetic minerals.

The mass magnetic susceptibility ( $\chi$ ) indicated the relatively large variation in samples. The values of  $\chi$  were  $14-70 \times 10^{-8} \text{ m}^3/\text{kg}$ . Diversification of  $\chi$  values is a result of glacier erosion of the bedrock with different geological structure.