Lead Author e-mail: *mmosk@igf.edu.pl*

Title: *Bathymetry and Slope Stability of Isvika Bay, Murchisonfjorden, Nordaustlandet*

Mateusz Moskalik[1], Tadeusz Pastusiak[2], Jarosław Tęgowski[3]
[1]***Department of Polar Research, Institute of Geophysics, Polish Academy of Sciences***
[2]*Faculty of Navigation, Gdynia Maritime University*
[3]*Institute of Oceanography, Faculty of Oceanography and Geography, Gdańsk University*

A research expedition to the polar region of Murchisonfjorden (Nordaustlandet, Svalbard) on the research vessel Horyzont II took place in August 2009. Results from an extensive bathymetric measurement campaign of the Isvika Bay, southern part of Murchisonfjorden are presented. A detailed analysis of the bathymetric features, seafloor slope and aspect, catchment area are performed with a special emphasis on the slope stability conditions. A simple method based on Stability Index for identifying areas of sediment redeposition is proposed. By analyzing all maps of the Isvika Bay, it was possible to distinguish a two north-east and south-west parts separated by an underwater ridge. Both of the parts characterize very steep slope from the coastline and almost flat bottom in the central parts with depths between 120-140 metres for SW and 60-90 metres for NE. The maps indicate several geomorphological forms such as gullies and ridges. No forms could be linked to glacial episodes. The most characteristic elements are located on the slopes towards the costline. The forms often join in between, creating a form of network. The bottom of the bay, which is almost flat, does not show any differences in analyzed parameters. There are several semicircular forms in the southern part of the bay and could be associated with a greater landslides in the area.