



Hornsund – sigma layers and flexible mesh hydrodynamic model

Szymon Kosecki, Anna Przyborska, and Jaromir Jakacki
(skosecki@iopan.gda.pl)

In times of dynamic climate change we are trying to predict what effect it will trigger on a specific environment. System with low inertia and directly subjected to factors related to climate change, will respond quickly and clearly. Fjord is a specific system, the system on which the marine conditions and inland conditions have significantly affect.

Hornsund is a small fjord located in the southern part of Svalbard. Its hydrodynamic work force, among other things: tidal current, cold East Spitsbergen Current and indirectly warm West Spitsbergen Current, freshwater runoff from melting glaciers and specific atmospheric conditions. Modeling allows us to answer the question of which of these factors have a decisive impact on the ecosystem of Hornsund. This allows to formulate a hypothetical states of the dynamic impact of climate change and imaging changes occurring in the fjord environment.