



The Impact of Geothermal Heat on the Scandinavian Ice Sheet's LGM Extent

Izabela Szuman (1), Marek W. Ewertowski (1), and Jakub Z. Kalita (2)

(1) Department of Geomorphology, Faculty of Geographical and Geological Sciences, Adam Mickiewicz University of Poznan, Poland (szuman@amu.edu.pl; evert@amu.edu.pl), (2) Department of Geodesy, Koszalin University of Technology, Poland (jakub.kalita@tu.koszalin.pl)

The last Scandinavian ice sheet attained its most southern extent over Poland and Germany, protruding c. 200 km south of the main ice sheet mass. There are number of factors that may control ice sheet dynamics and extent. One of the less recognised is geothermal heat, which is heat that is supplied to the base of the ice sheet. A heat at the ice/bed interface plays a crucial role in controlling ice sheet stability, as well as impacting basal temperatures, melting, and ice flow velocities. However, the influence of geothermal heat is still virtually neglected in reconstructions and modelling of paleo-ice sheets behaviour. Only in a few papers is geothermal heat recalled though often in the context of past climatic conditions. Thus, the major question is if and how spatial differences in geothermal heat had influenced paleo-ice sheet dynamics and in consequence their extent. Here, we assumed that the configuration of the ice sheet along its southern margin was moderately to strongly correlated with geothermal heat for Poland and non or negatively correlated for Germany.