



Project acronym: SUBTOP

Project title: Subglacial topography, thickness and internal structure of Hintereisferner, Austria

Project leader: Kristaps Lamsters, University of Latvia, Latvia

Discipline: Earth Sciences & Environment: Global change & Climate observation

Station(s): Station Hintereis (Austria)

This application is aimed for the research grant of INTERACT Transnational Access call. Our research group will consist of three persons including two early career scientists and we are planning to conduct fieldwork on the Hintereisferner glacier located near the field research station Hintereis, Austria. The project's aim is to obtain detailed and high-precision ground penetrating radar (GPR) measurements for the estimation of glacier thickness, volume, internal structure, and overall 3D geometry. We will use a combination of GPR measurements and available data from the permanent laser scanner near the station to construct the model of the subglacial topography. Up to now, only ice thickness data for the Hintereisferner are point data available from the year 2001 from the Austrian glacier inventory. These data lack the detail and accuracy needed for the precise ice volume estimation and characterization of glacier internal structure including englacial drainage routes and zones meltwater concentration. We intend to obtain GPR data that would be highly valuable also outside the proposed project as Hintereisferner is widely used as a test bed for various glaciological and hydrometeorological applications considering its long mass balance and meteorological observation time series. Detailed ice thickness data would provide the opportunity not only to characterize the glacier geometry but also to use these data as input for glacier models or as validation for models, which estimate the glacier thickness.