



**Project acronym:** GSD

**Project title:** Glacier Sliding Dynamics

**Project leader:** Inka Koch, University of Tübingen, Germany

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

**Station(s):** Station Hintereis (Austria)

Research into Glacier Sliding Dynamics (GSD) was conducted at the Station Hintereisferner in order to improve knowledge on glacier flow and thus transfer of ice mass from higher to lower elevations where it is prone to faster ablation. In particular we were expanding on previous glacier ice thickness measurements at the glacier to help future modelling efforts, taking advantage of state of the art radar technology; the autonomous phase-sensitive radio-echo sounder (ApRES) is designed to track changes in radar reflectors through time, that can inform about the presence of water at the glacier bed as well as glacier ice thickness change. This work opened up another dimension of investigations at the Hintereisferner (glacier ice thickness and potentially ice dynamics). Since the ApRES' is a novel radar that not only records the power but also the phase of the radar signal, the ice thickness could be recorded with much detail also in the warmer alpine ice where traditional radars often fails (due to the increased water content that obscures the radar signal). Access to the excellent Hintereis station logistics allowed us to fine tune operational needs associated with the very specialized field equipment before taking it to the polar region. The work was already presented at EGU 2022 and one PhD student, who joined the fieldwork, is working on incorporating our Hintereisferner findings in a scientific publication.