Challenges and Opportunities in Model-Data Comparison for Paleoglacier Reconstructions

#British #Eurasian #Greenland Ice Sheets #European Ice Field

Tuesday June 25th 2024 | UZH, Irchel Campus, room Y25 H92

Registration: Please send an email to sarah.kamleitner@unil.ch to confirm your presence.

Motivation & tentative schedule

Our understanding of the most recent and extensive glaciations primarily comes from geomorphological evidence and geochronological markers left on the landscape. The latest advances in numerical modeling of the climate-glacier system offer a promising tool to deepen our understanding of glacial landscape evolution based on physical principles, verify data-based assumptions, and fill knowledge gaps. However, comparing model outputs against geological data quantitatively remains a delicate task, particularly when trying to derive a consistent spatial and temporal paleo-reconstruction of glacier evolution. In this series of talks, we provide an overview of projects addressing this challenge for the reconstruction of the former British-Irish Ice Sheet (BRITICE), the Greenland and Eurasian Ice Sheets (PALGLAC), and Alpine Ice Field (RECONCILE).

9.00   Welcome coffee

9.30   **Morning: British-Irish (BRITICE) & Eurasian/Greenland (PALGLAC) ice sheets**

Welcome (**Anderas Vieli**, UZH)

Chris Clark (Sheffield): Why did it take so long for ice sheet model-data comparisons to happen; some history, barriers to overcome and lessons learnt from the BRIT-ICE-CHRONO project.

Jeremy Ely (Sheffield): Mixing mud and numbers: Deficiencies in model-data comparison tools for palaeo-ice sheet modelling.

Rosie Archer (Sheffield): Calibrating the input parameter space of numerical ice sheet models using flow data.

Remy Veness (Sheffield): Multi proxy model data comparison: Can we use erratics as a time transgressive indicator of ice flow geometry?

12:00   Lunch at UZH cafeteria

13.30   **Afternoon: Alpine Ice Field (RECONCILE)**

Guillaume Jouvet (UNIL): Overview of RECONCILE. New perspectives for modeling paleo ice sheets and ice fields based on AI & GPU accelerated models.

Sarah Kamleitner (UNIL, UZH): AlpIce - Towards an Alps-wide database of empirical geo(chrono)logical data constraining LGM to Holocene glacier fluctuations.

Tancrède Leger (Sheffield, UNIL): High-resolution modeling of the LGM and subsequent deglaciation of the Alpine Ice Field using IGM: first results of the RECONCILE project.

Samuel Nussbaumer & Andreas Henz (UZH): Little Ice Age and before: How can we automatically convert geomorphology into a format that allows a comparison between data and models.

Julien Seguinot (Vrije Universiteit Brussel): Last-glacial-cycle glacier erosion potential in the Alps.