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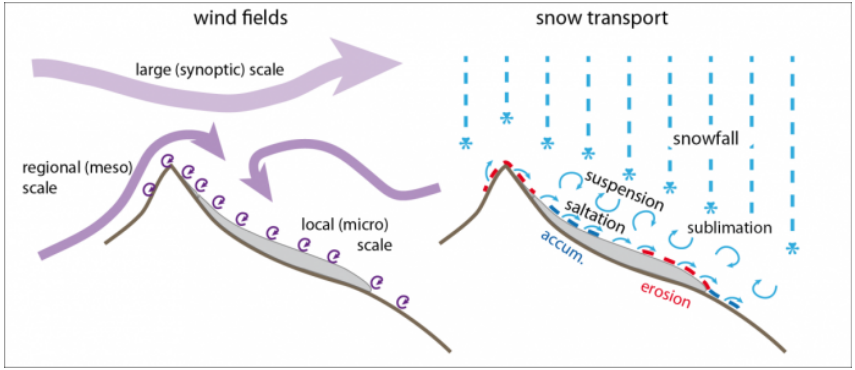
The SCHISM project

Snow-cover dynamics and high-resolution modelling at Hintereisferner glacier, Austria

Brigitta Goger
Annelies Voordendag, Georg Kaser, Tobias Sauter

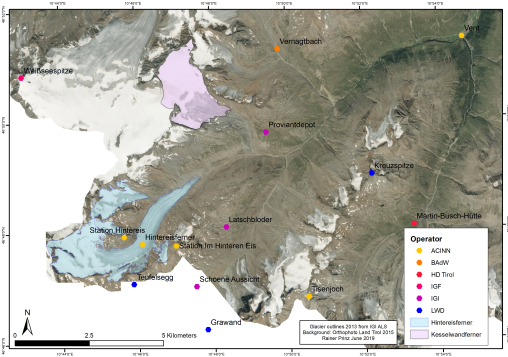
Snow cover dynamics on glaciers



Explore the influence of small-scale processes on glacier mass balance

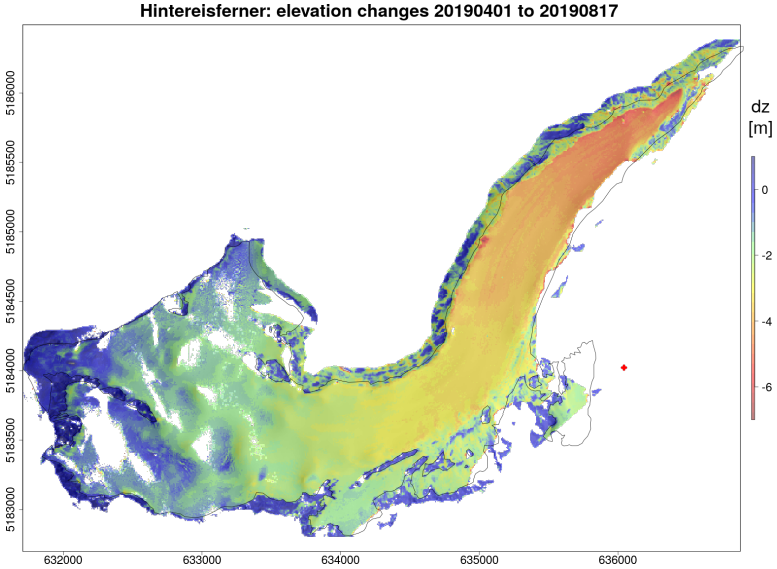
Observations

Study region:
Hintereisferner glacier
Ötztal Alps, Austria



- Surface height change: terrestrial laser scans
- Meteorological variables (wind speed, temperature,...)
- Precipitation: Micro Rain Radar
- Snow drift sensors

Terrestrial Laser Scanner | Surface height changes



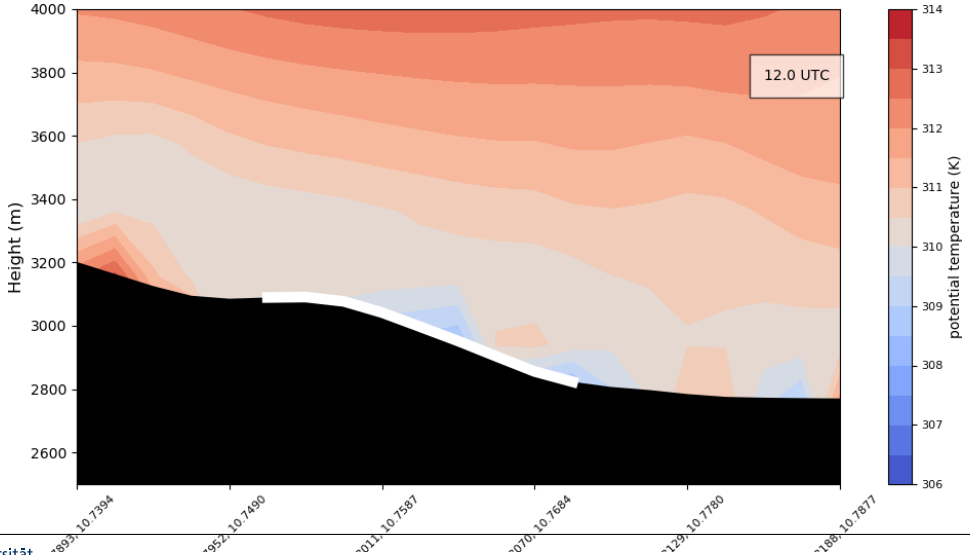
High-resolution Numerical Modelling

Case studies of two weather situations:

1. thermally-driven wind circulation, undisturbed ABL
2. strong snow transport mechanisms
   (high wind speeds after a precipitation event)

- NWP model: WRF-ARW v.4
- Set-up:
  - ERA-5 Data (input)
  - (several coarser domains)
  - mesoscale simulation: $\Delta x = 240\,\mathrm{m}$
  - large-eddy simulation: $\Delta x \approx 50\,\mathrm{m}$ (work in progress)

Cross-section: Potential Temperature (12 UTC)



Thank you!

Hintereisferner - Blick Richtung Weißkugel und Langtaufererspitze
09.09.19 15:30 7.2°C
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