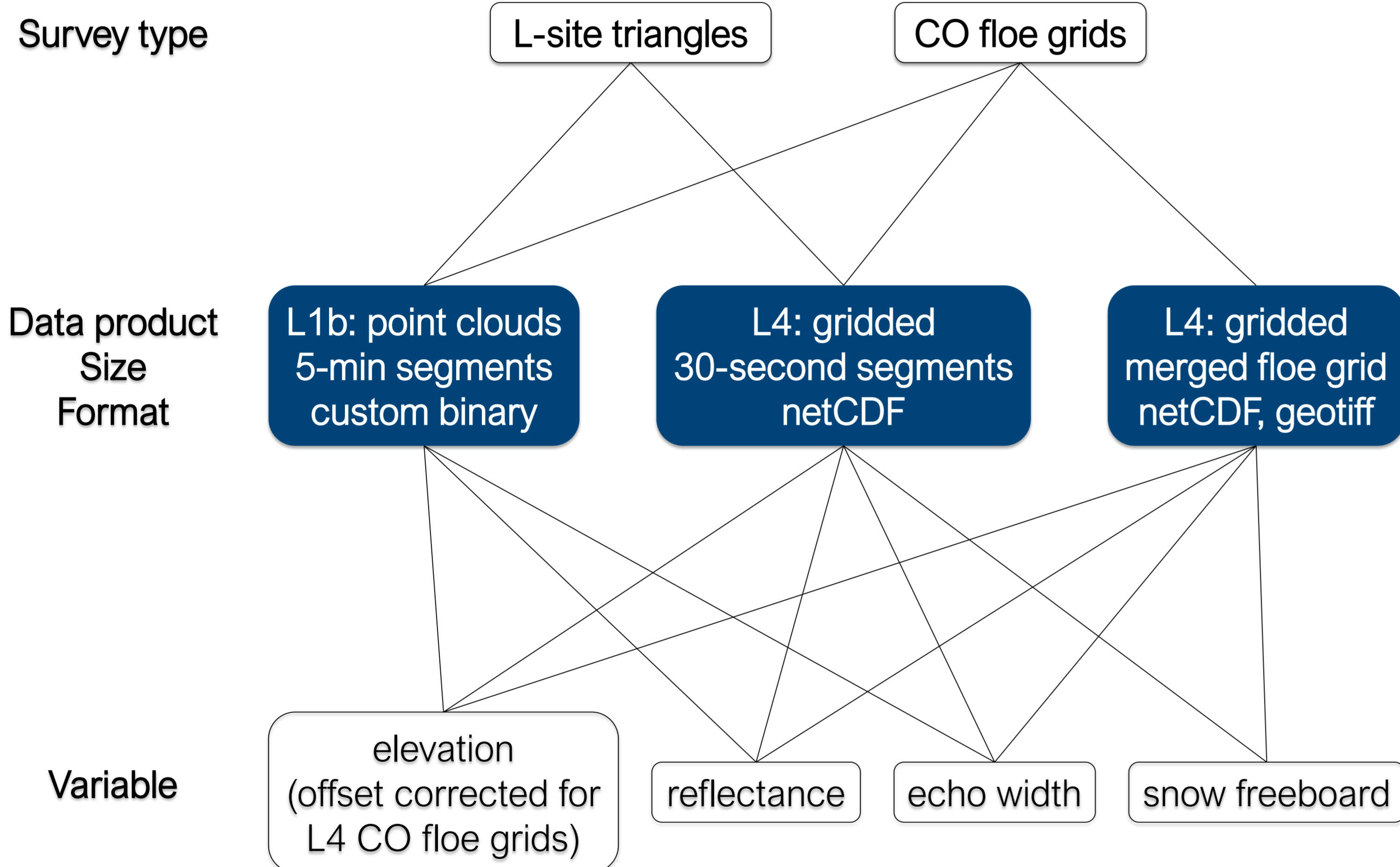
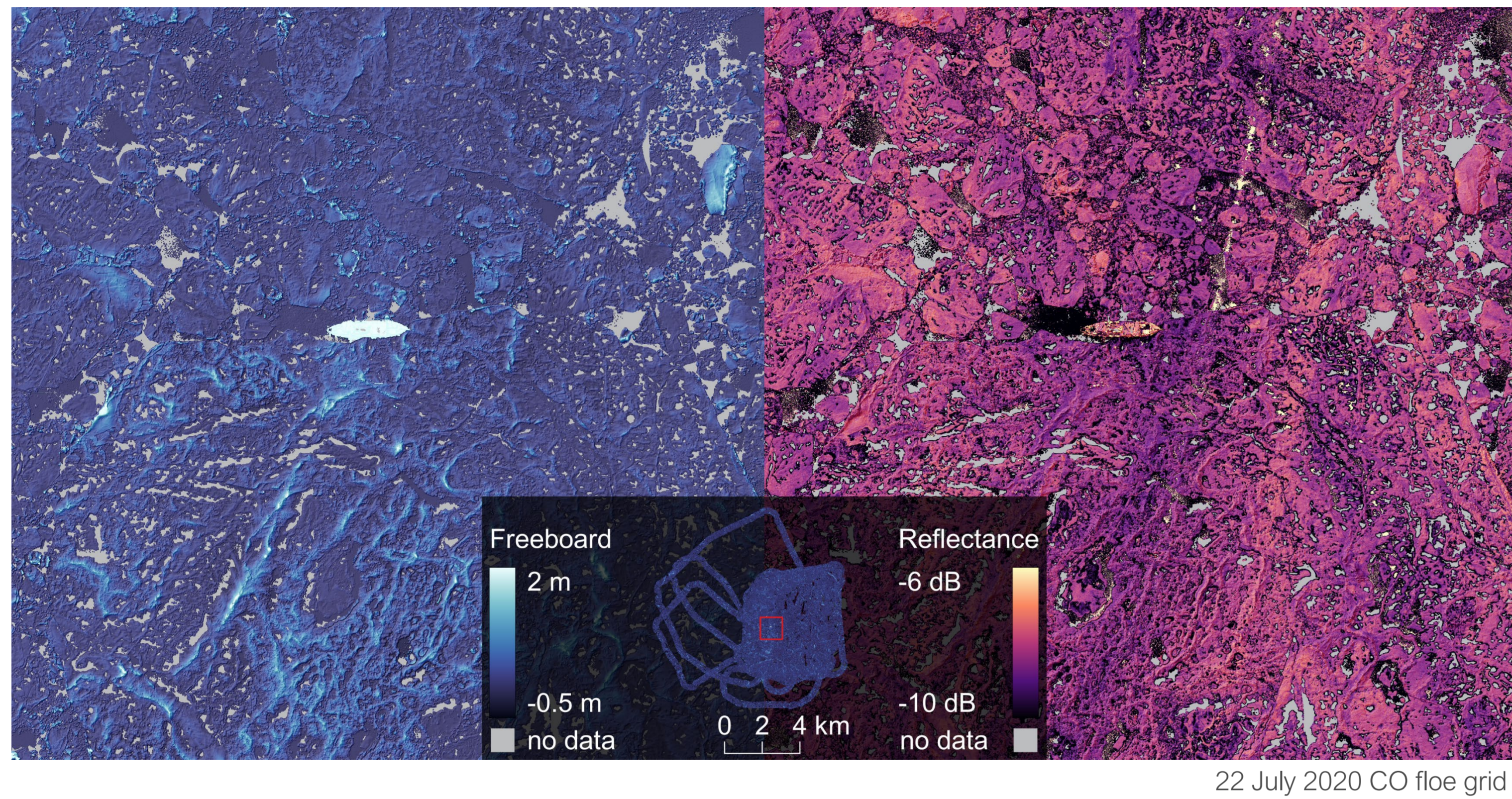
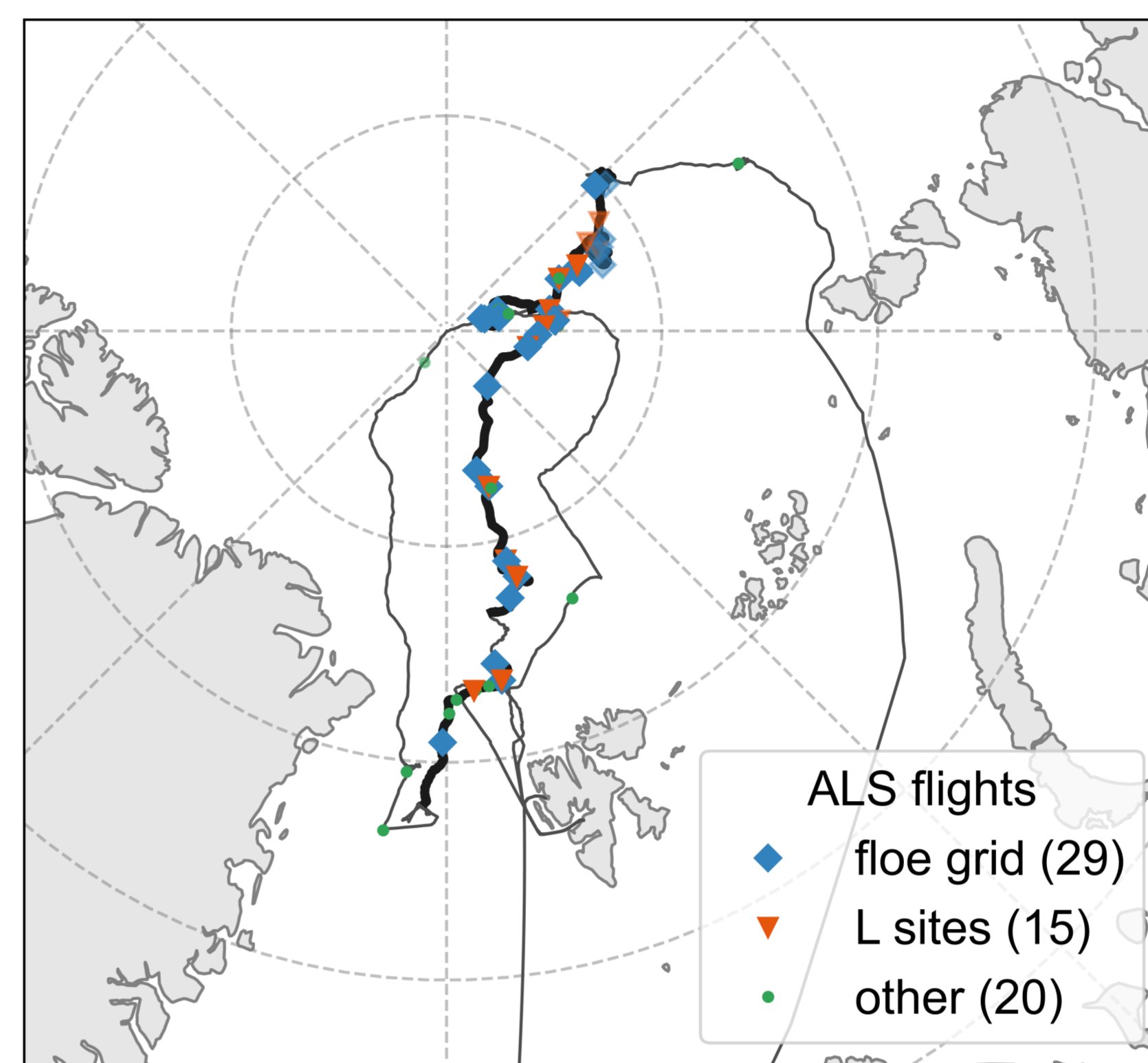


Kilometer-scale digital elevation models of the sea ice surface with airborne laser scanning during MOSAIC

Data products: version 1



Overview

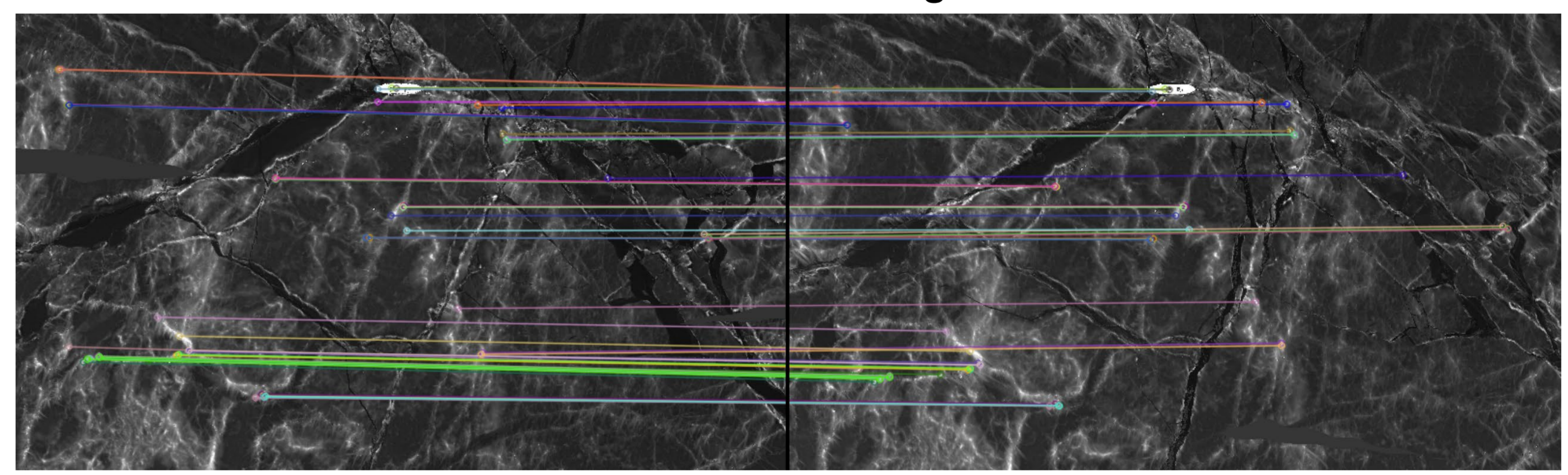


- ▶ Number of flights: > 60 (~weekly)
- ▶ Grid spacing: 0.5 m (or better)
- ▶ Scale: from local (CO floe grid, ~5x5 km) to satellite grid cell/regional (L-site triangles, up to ~25 km away from Polarstern)
- ▶ Challenge: degraded GPS precision >85° N

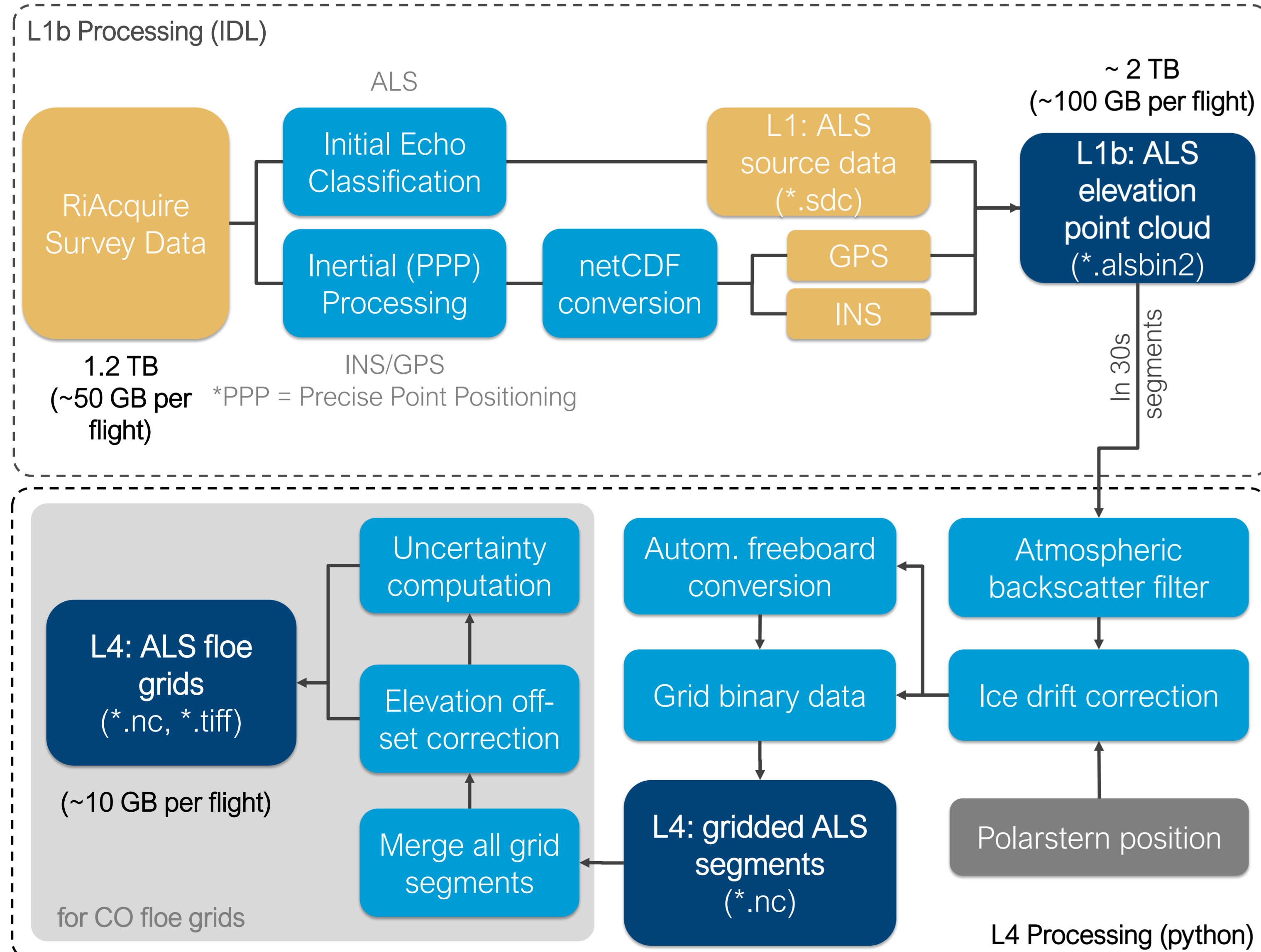
Science questions

- ▶ What are the spatial variability and temporal evolution of the snow and sea ice cover and their surface features over the annual cycle? Freeboard, roughness, deformation, snow redistribution, floe size, pressure ridges, melt ponds, etc.

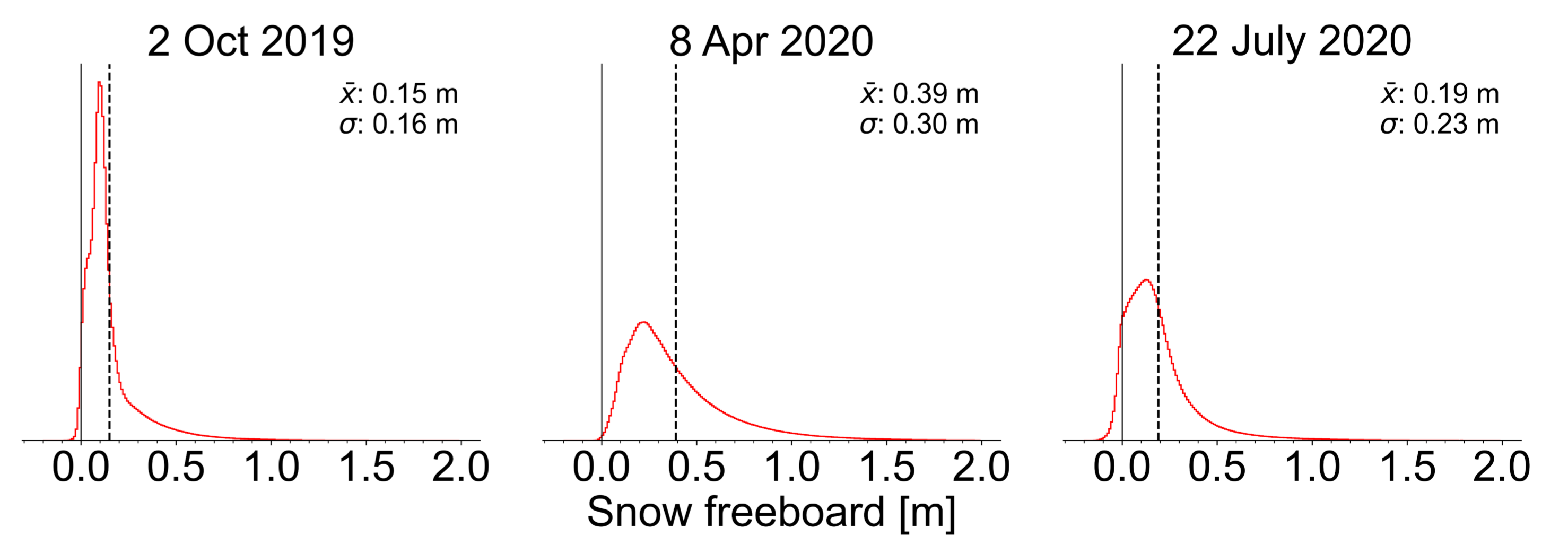
Feature tracking



Processing



Evolution of freeboard distribution



Full CO floe grids, variable areal coverage

- ▶ Still not sure how to access the ALS data? *Let's meet at FLEX time!*
- ▶ See also the poster by Hutter et al.: *Observations of sea-ice deformation and floe interaction from satellite observations and airborne laser scanner surveys during MOSAIC*