

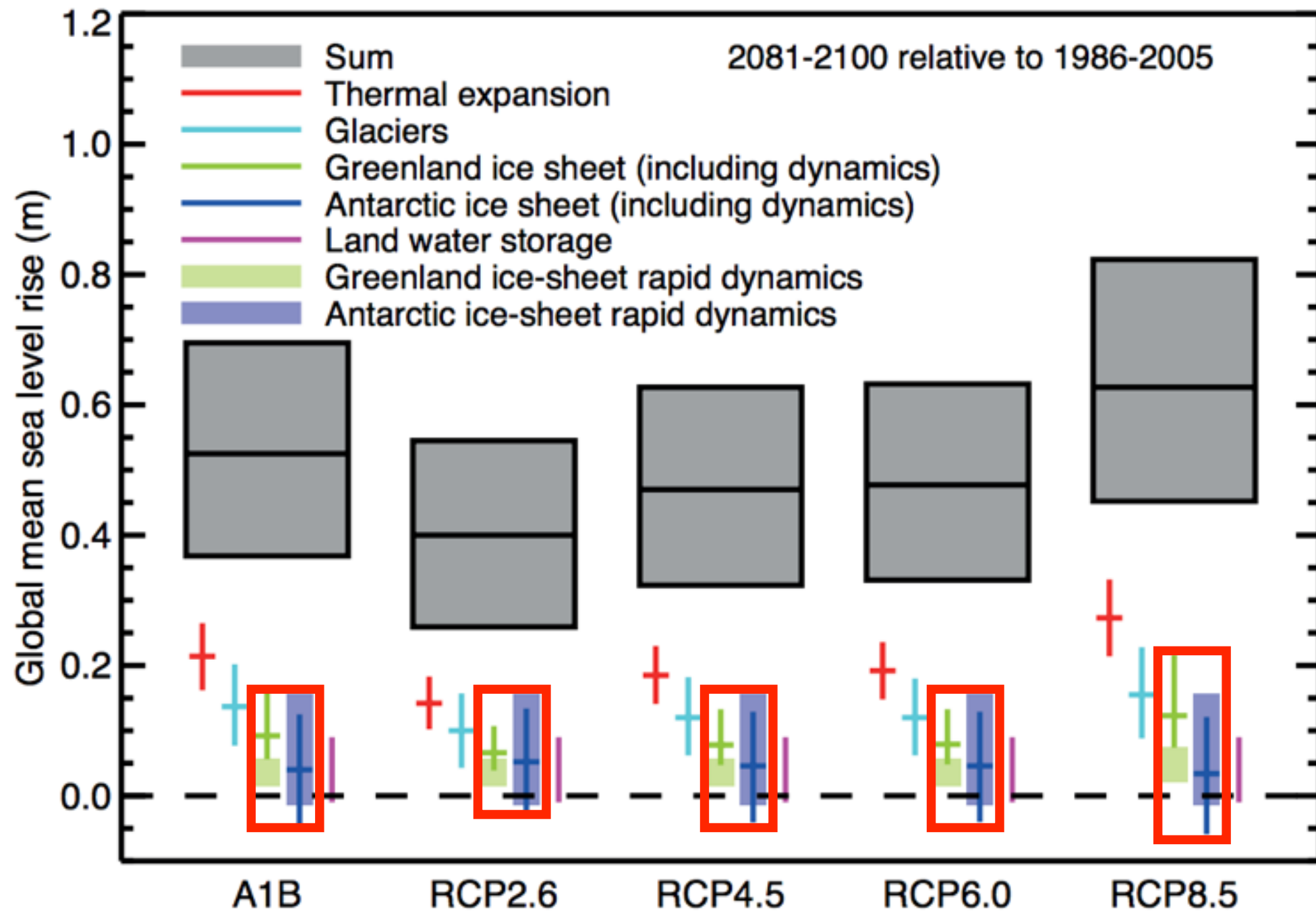
Assessing ice sheet changes from Copernicus satellites

Dr. Ir. **Stef Lhermitte**

earthmapps.io

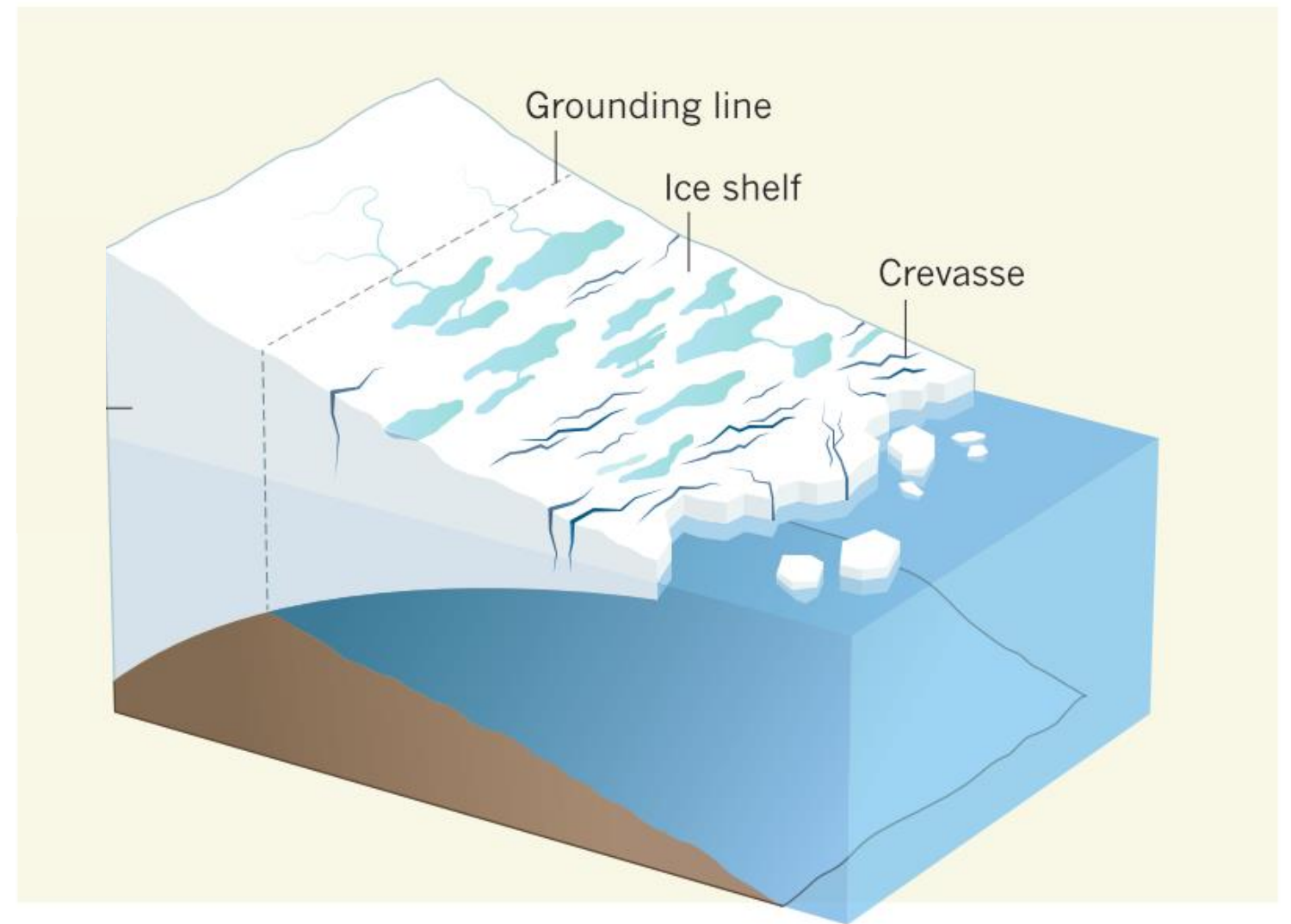
Department of Geosciences & Remote Sensing
Delft University of Technology

Greenland & Antarctica: largest uncertainties in sea level rise projections



Satellite data crucial to improve understanding

- Surface properties
incl. melt + albedo
S1, S2, ASCAT
- Elevation changes:
S1, CS
- Velocity changes:
S1
- Extent changes incl. rifting:
S1



- No operational service, but applied on GEE or from operational products



1 km

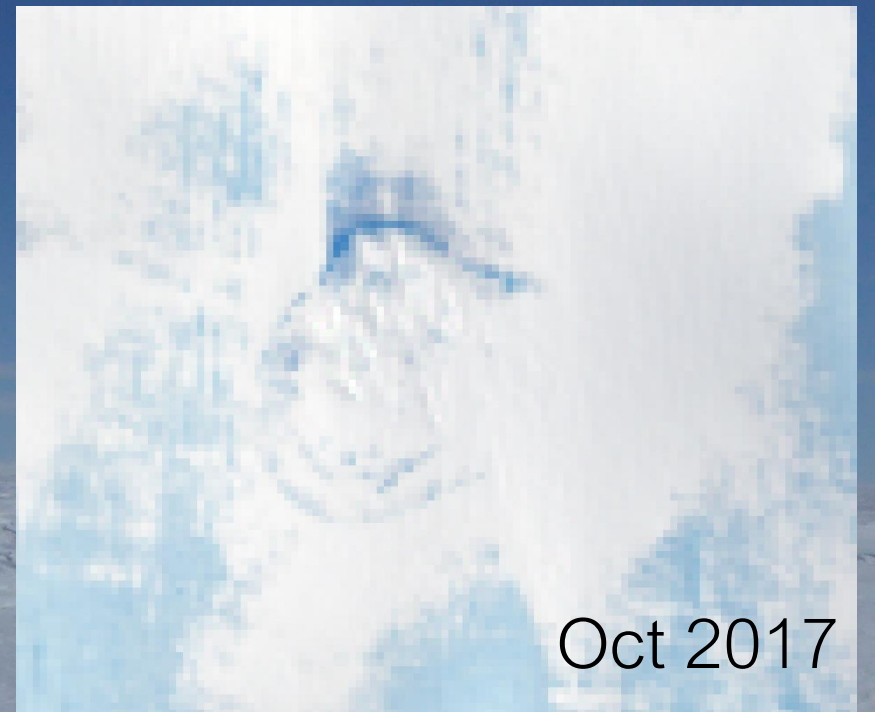
2015-06-20

Contains modified
#landsat8 data
provided by NASA
processed by @steflhermitte, TUDelft

Meltwater hydrology

Subsurface hydrology

Ice shelf hydrofracturing

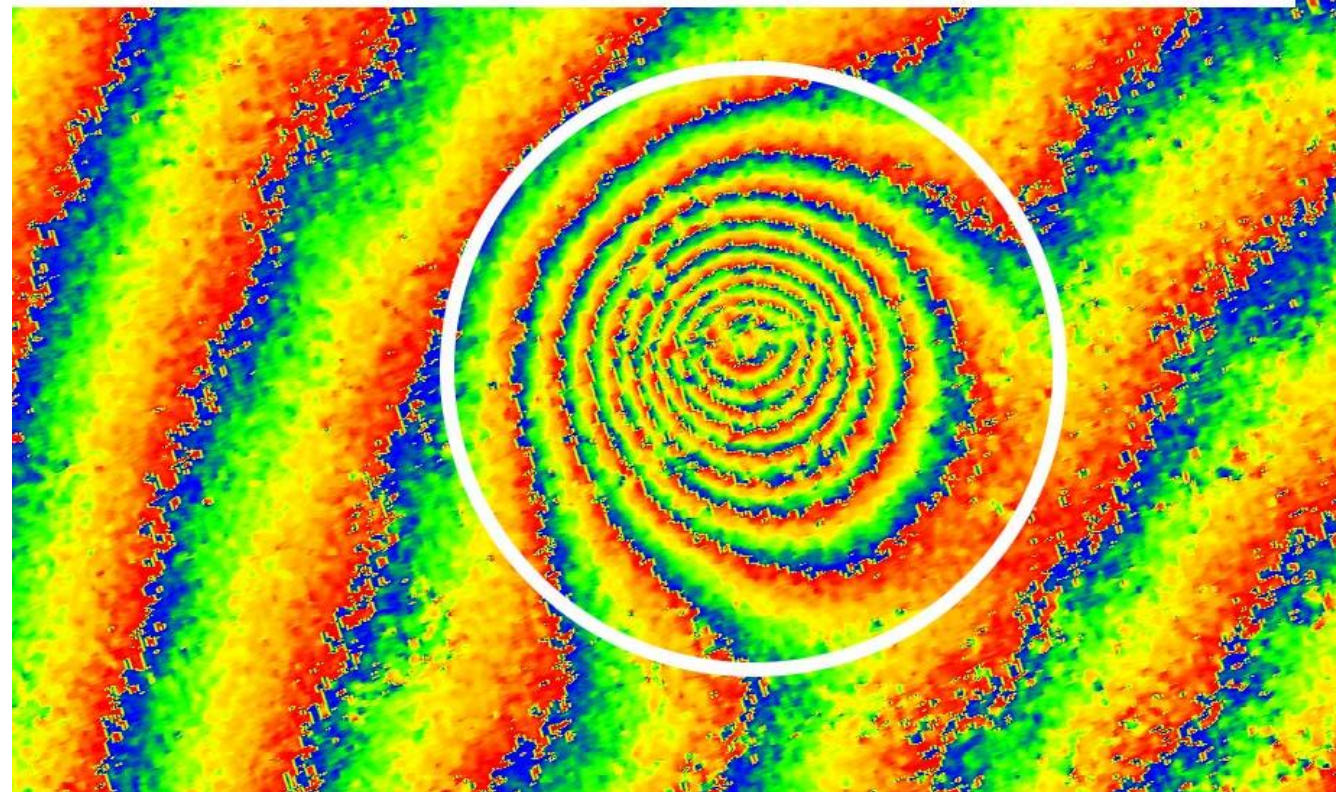


Ice shelf hydrofracturing

Landsat 8 - 01/12/2017

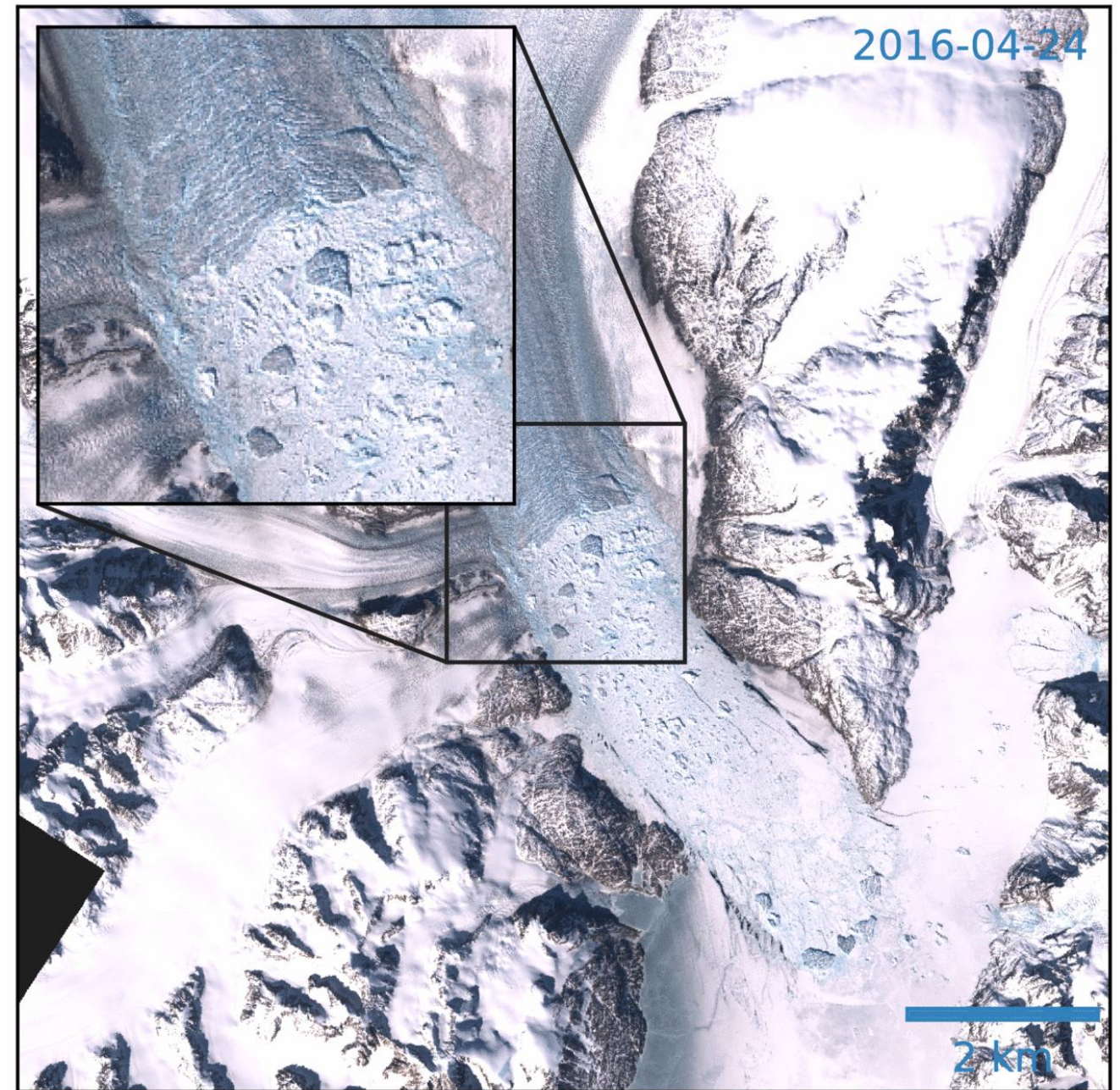
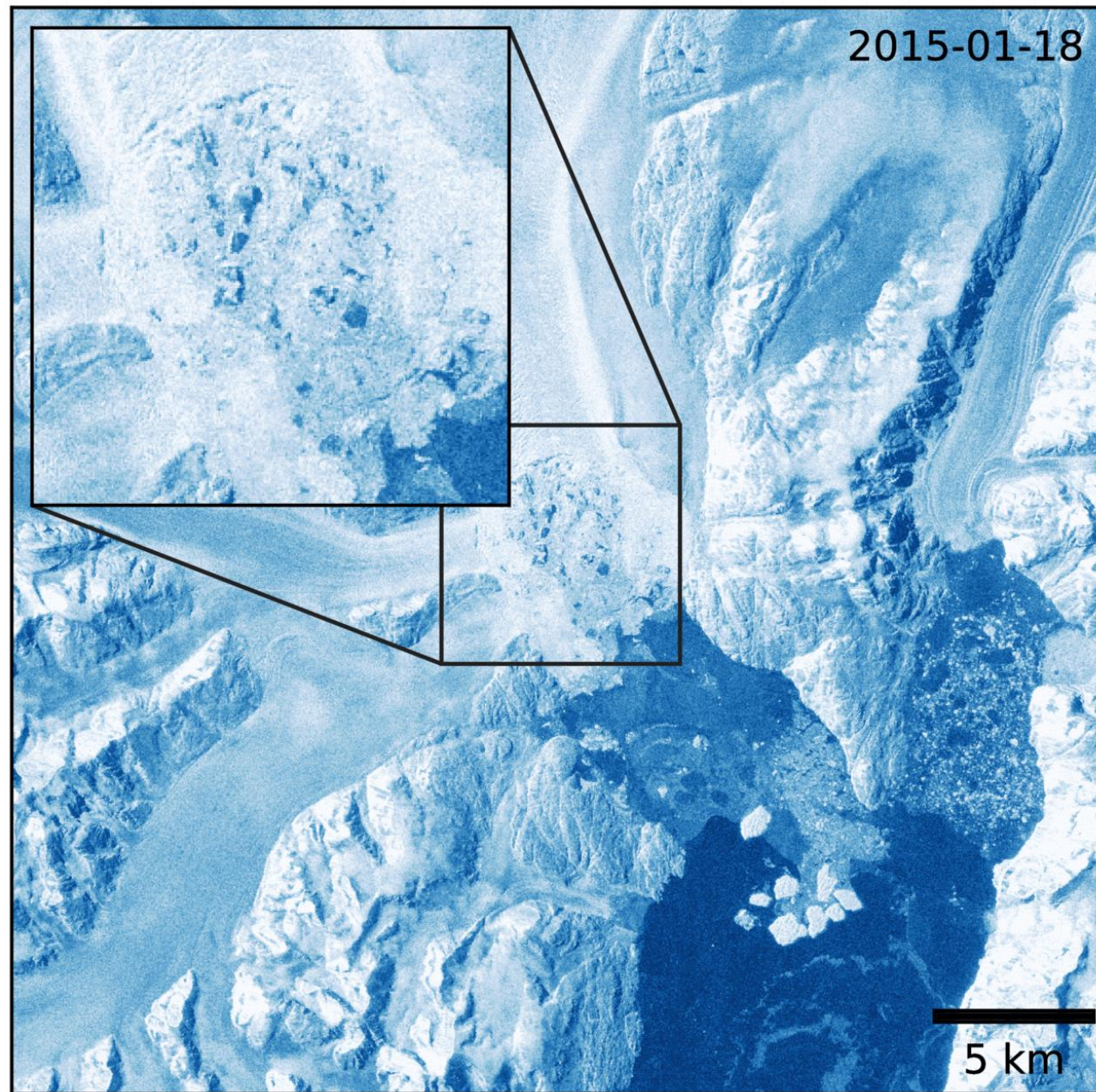


Interferogram - 04/12/2017 & 16/12/2017





Glacier tongue, ice shelf monitoring





Key points

- Current Copernicus portfolio is key for polar applications and provides a boost to our understanding
- Increasing data volume will allow to assess changes in ice sheets in more detail, certainly if combined
- GEE has been key for data uptake, while other platforms are still scattered, but this is changing rapidly!
- The cloud will be the future!

