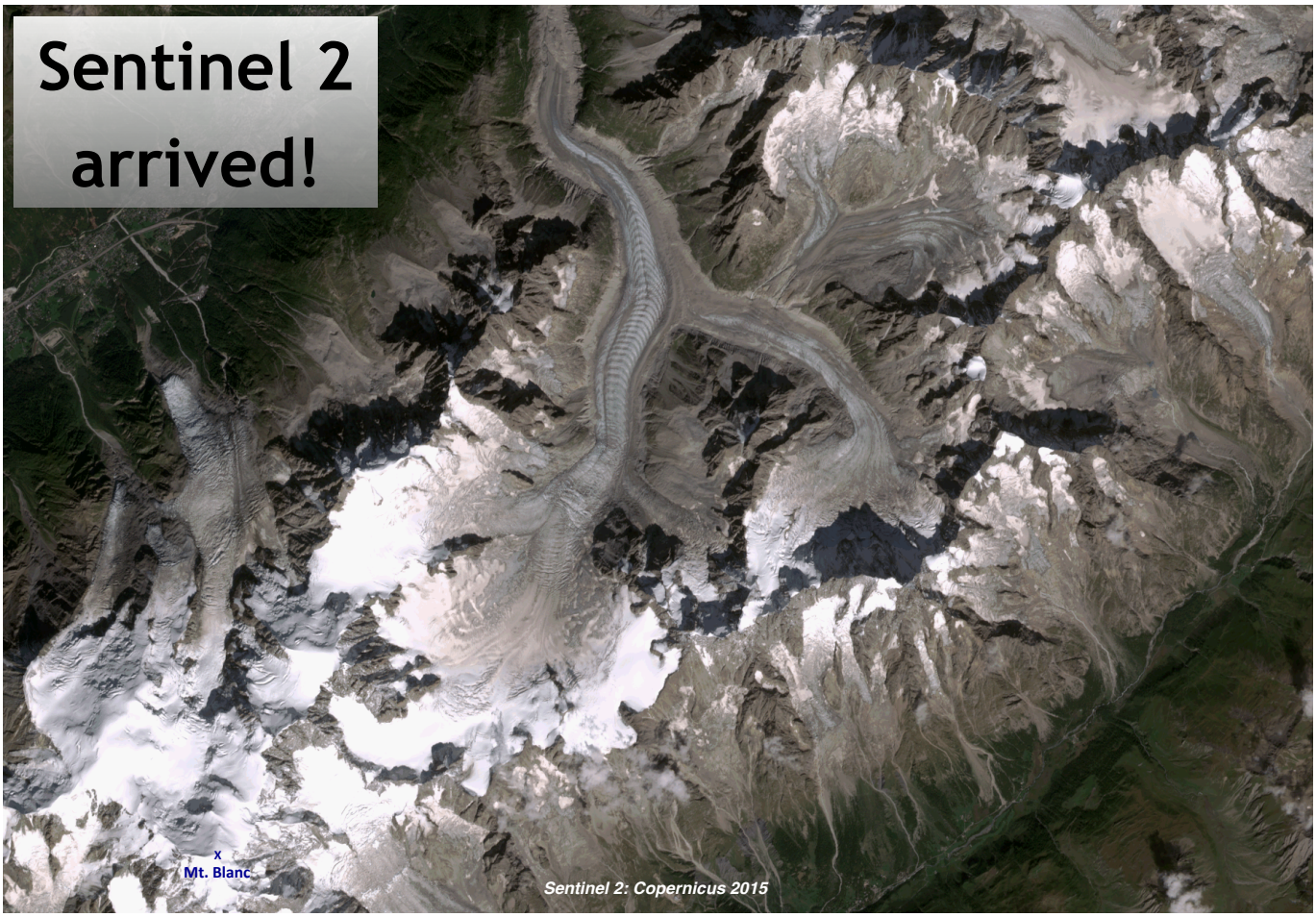
Glaciers_cci

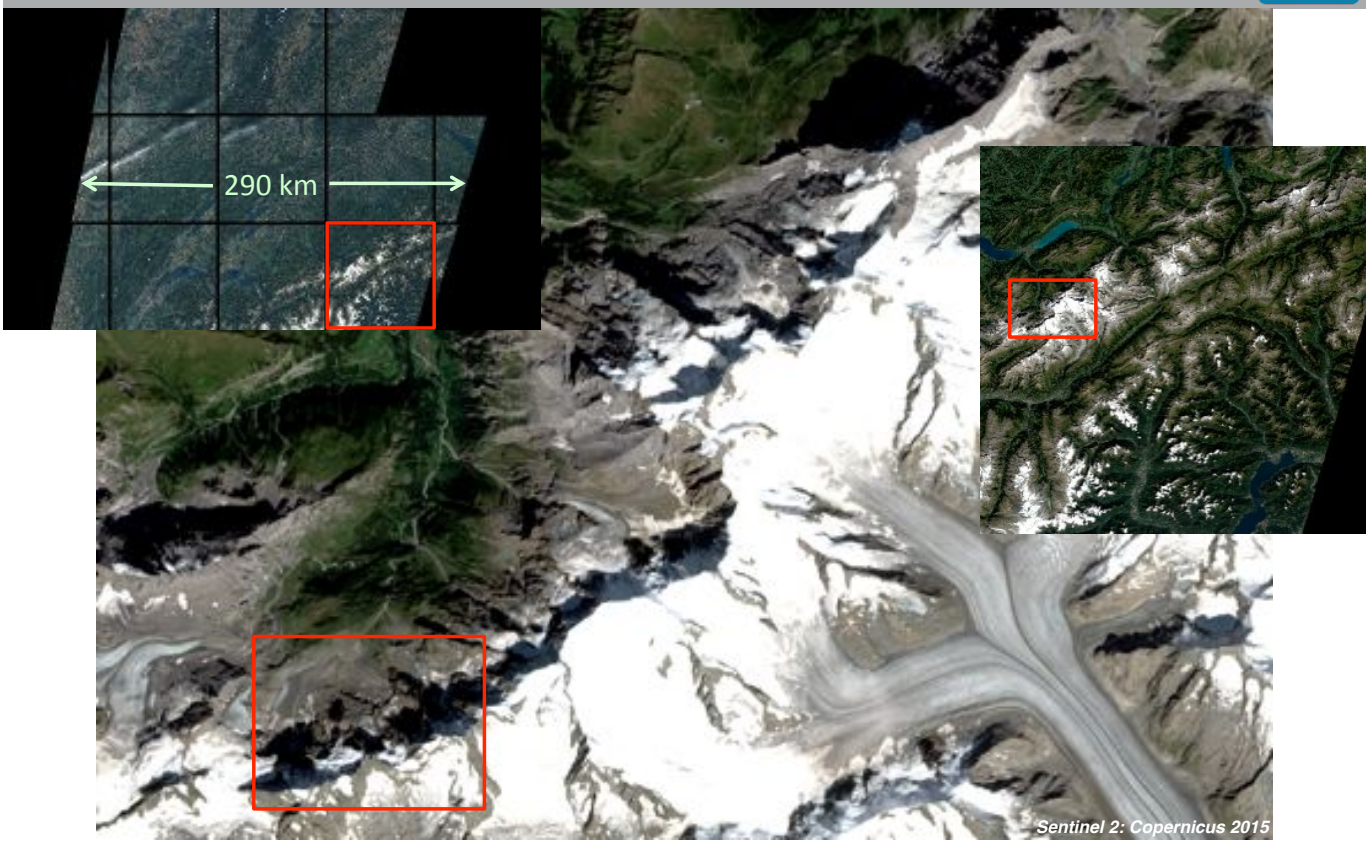
Project Status March 2016

F. Paul (GIUZ) for the Glaciers_cci consortium

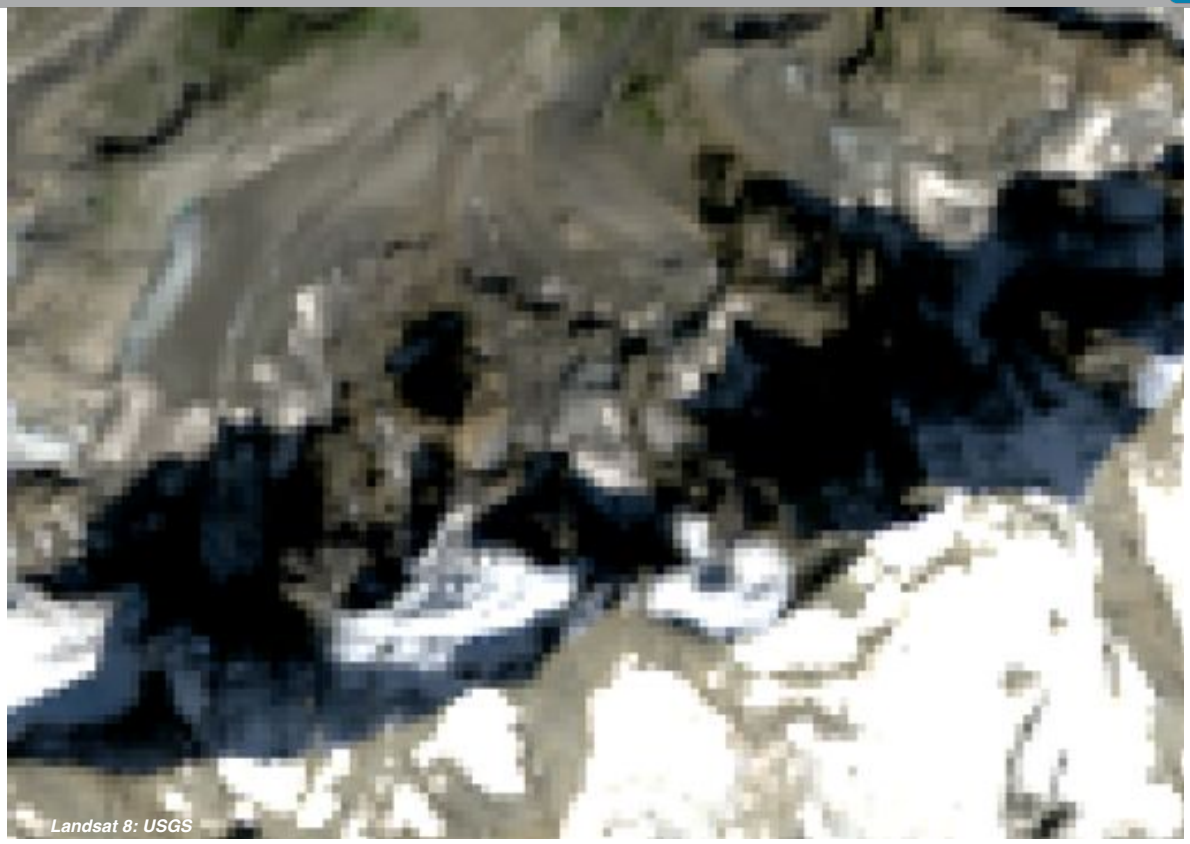
enveo · UNIVERSITY OF LEEDS · University of Zurich[UZH] · UNIVERSITY OF OSLO · GAMMA REMOTE SENSING



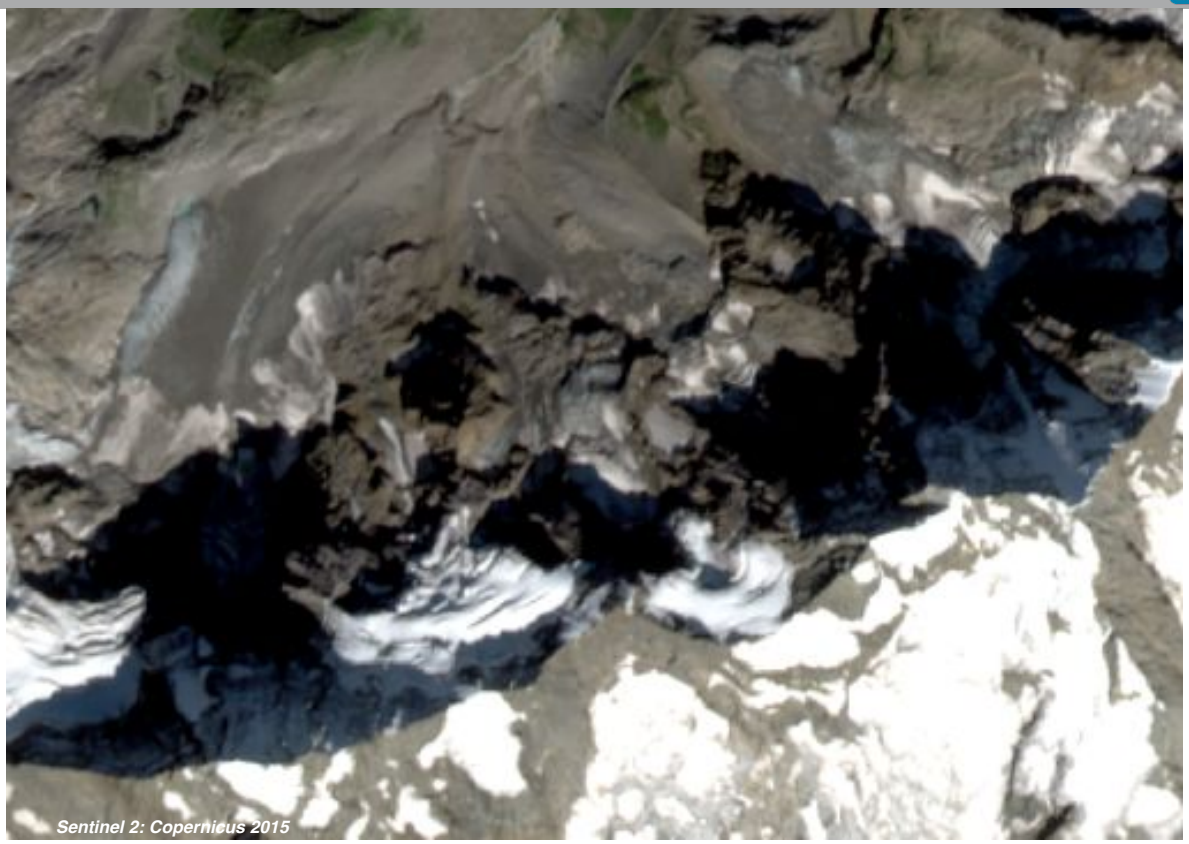
Sentinel 2 tiles and test region



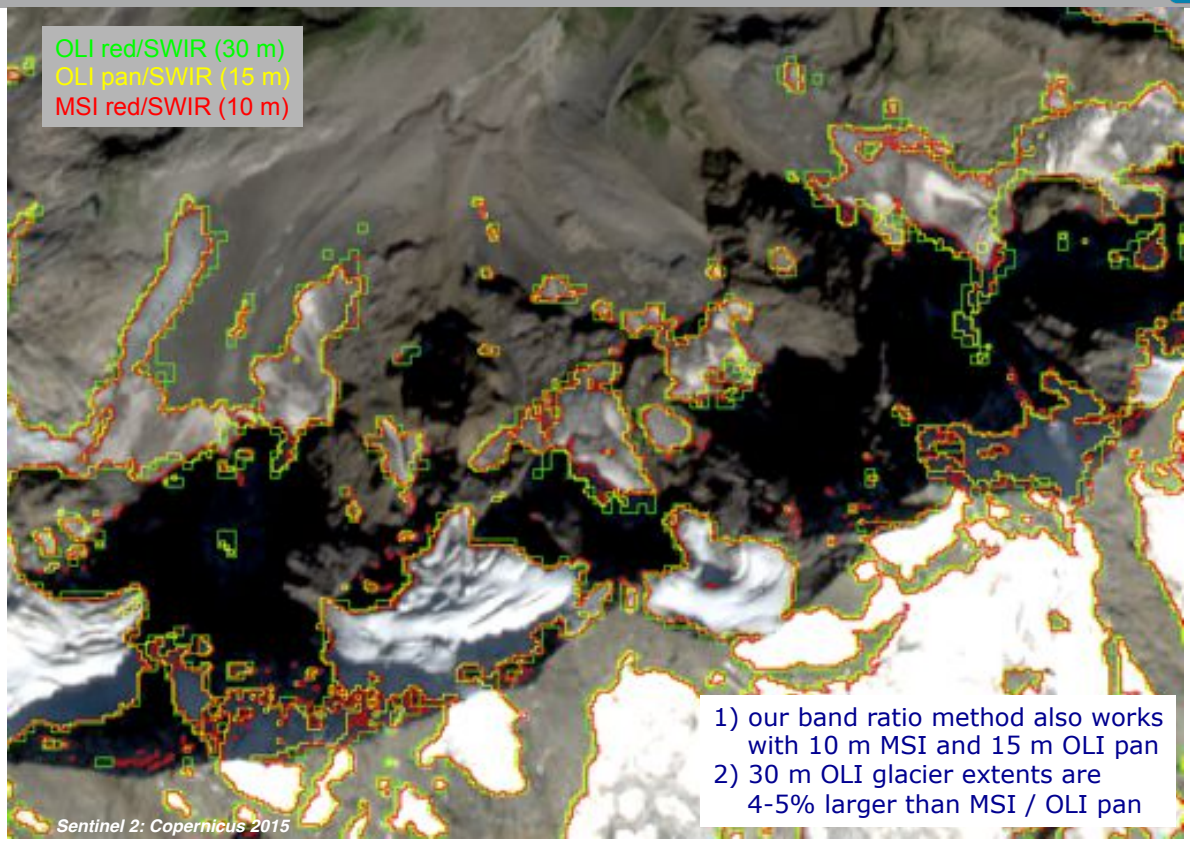
Spatial resolution Landsat OLI (30 m)



Spatial resolution Sentinel 2 MSI (10 m)



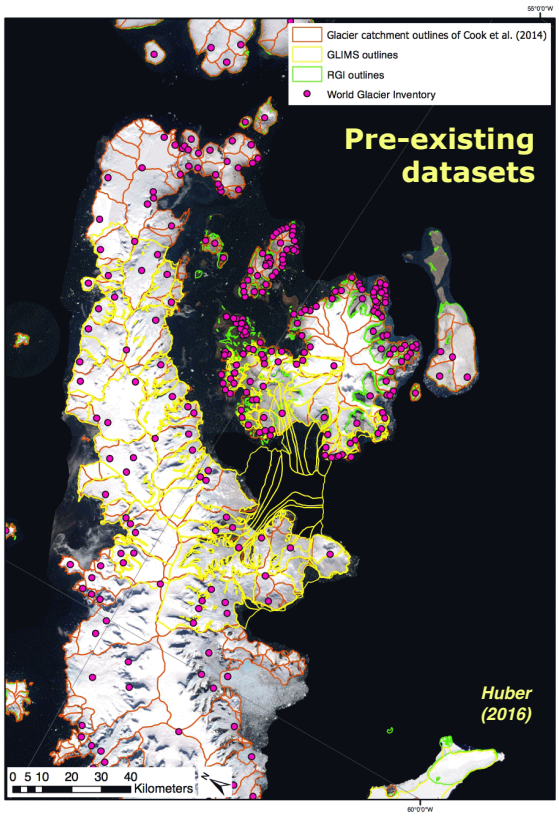
Glacier outlines from OLI and MSI

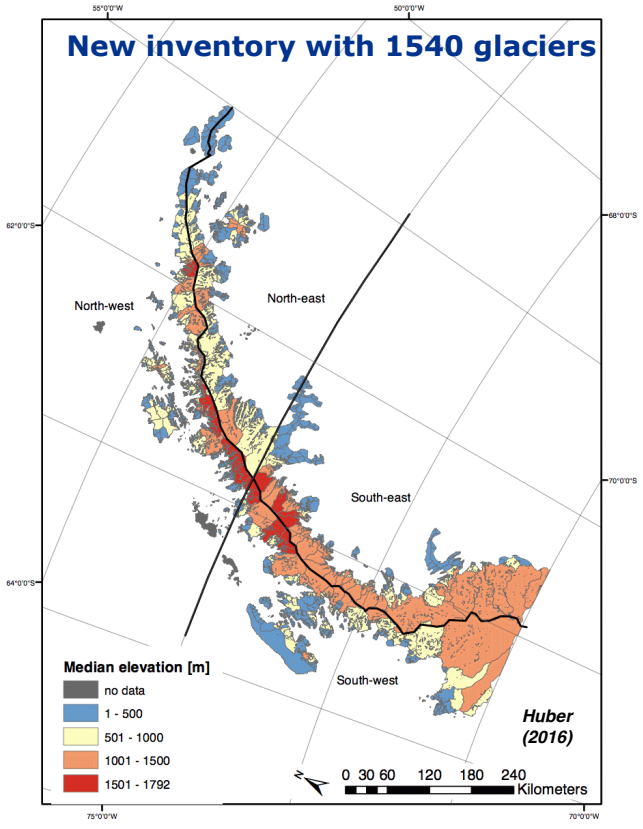


Data production overview: Key regions

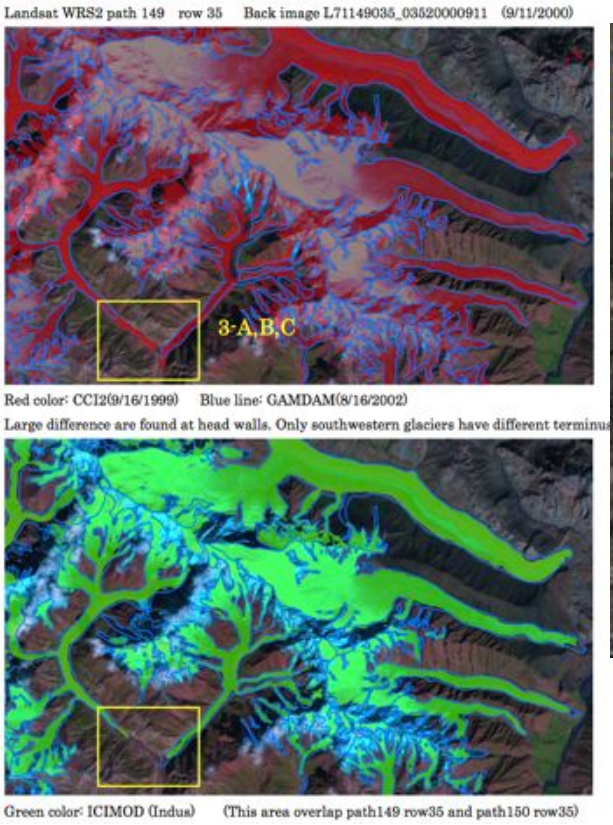
The selection of regions is based on: excluding ongoing work, considering data / quality gaps (e.g. RGI), performing change assessment, providing data for options (IV for O1), answering science questions (IPCC), improve process understanding through joint science (e.g. SEC-IV dependence), & perform X-comparison

New inventory: Antarctic Peninsula





Glacier inventory cross comparison



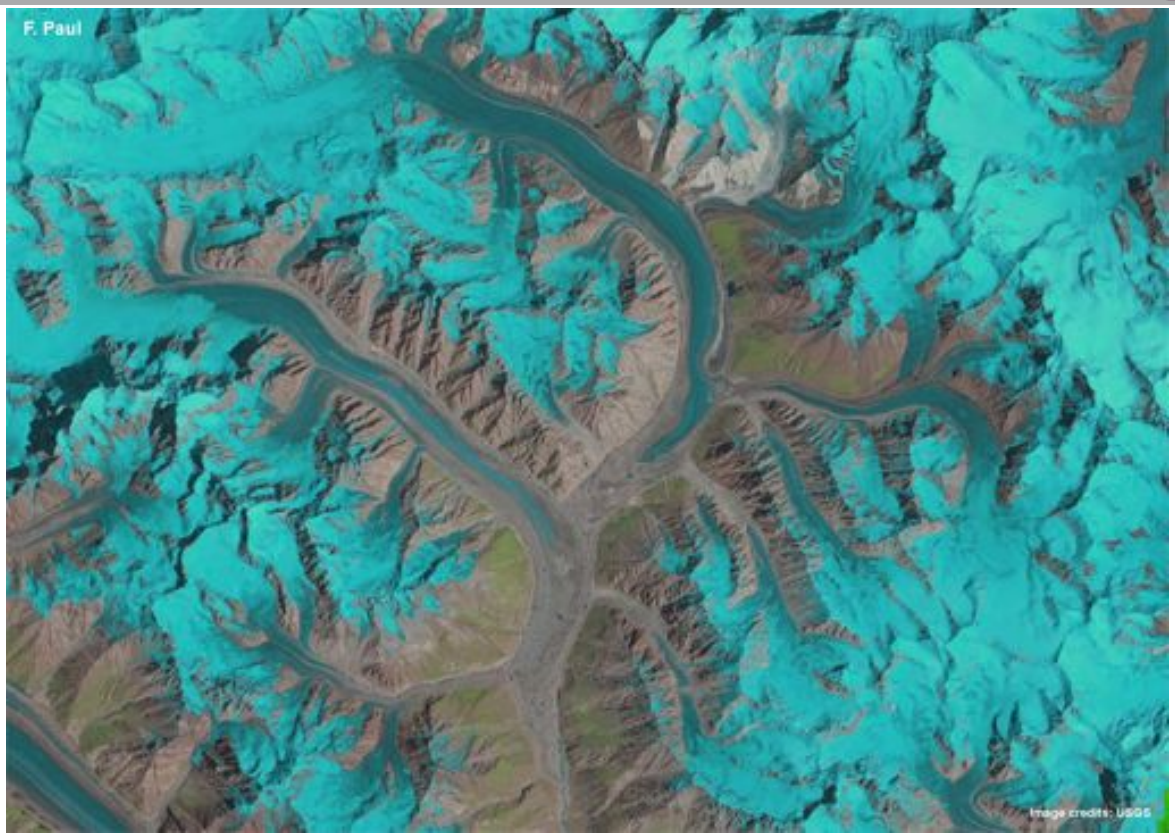
Compared inventories: CCI, GAMDAM, CGI2, ICIMOD

Different problems in accumulation and ablation regions:
Abl: debris cover, dead ice, rock glaciers
Acc: seasonal snow, steep ice fields, ice aprons

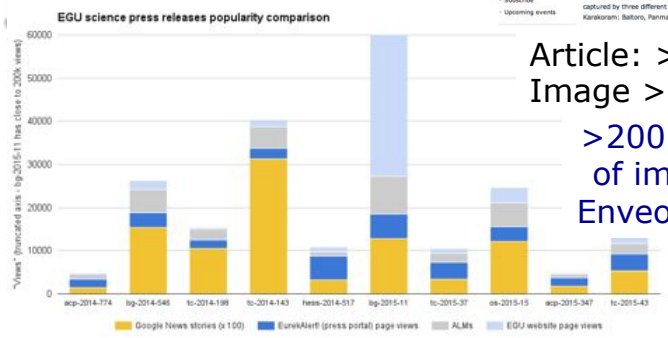
All images: A. Sakai

Delicate decissions (accumulation region)

Time series 1990-2015: Karakoram surges



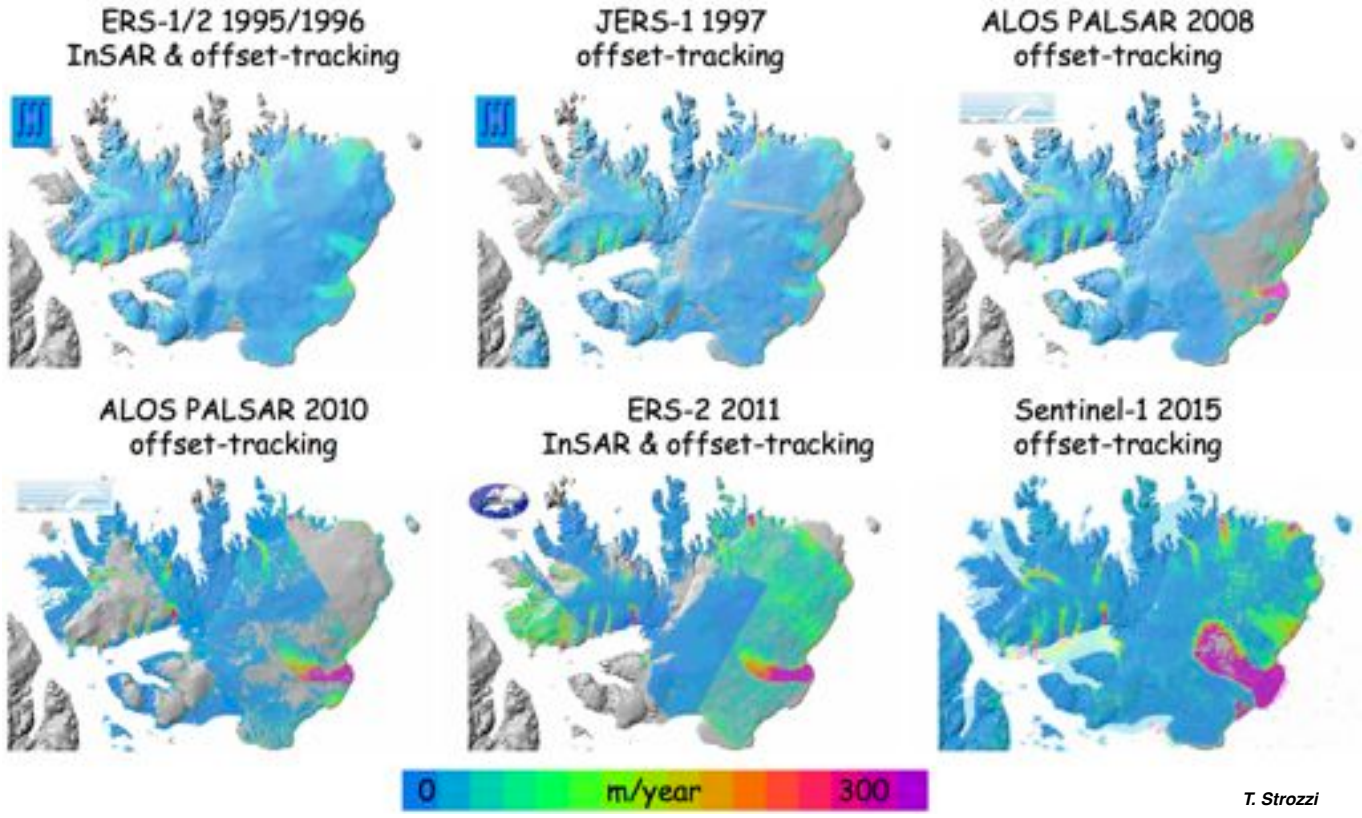
Big online media echo on animations



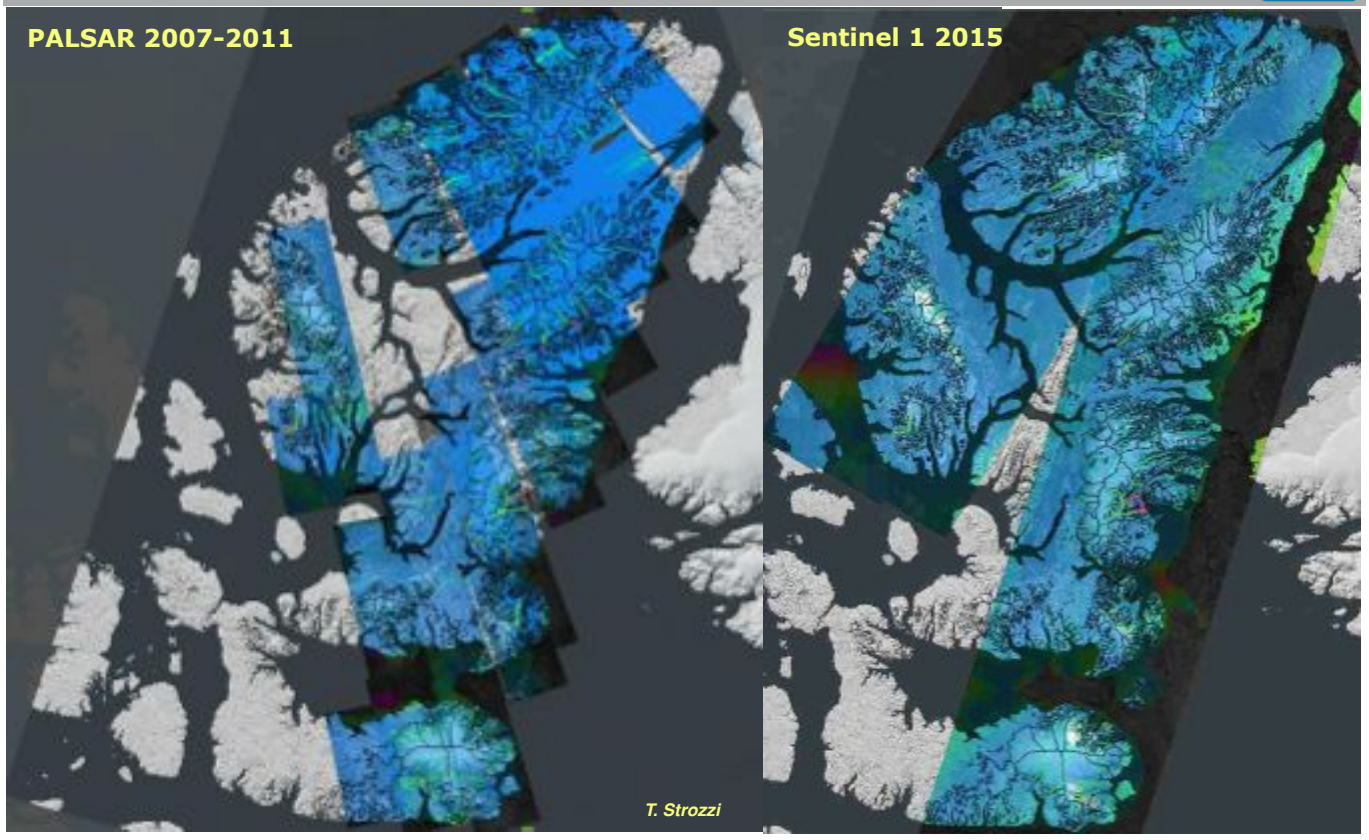
Article: >12400 views
Image > 14000 views

>200 downloads of images from Enveo Cryoportal

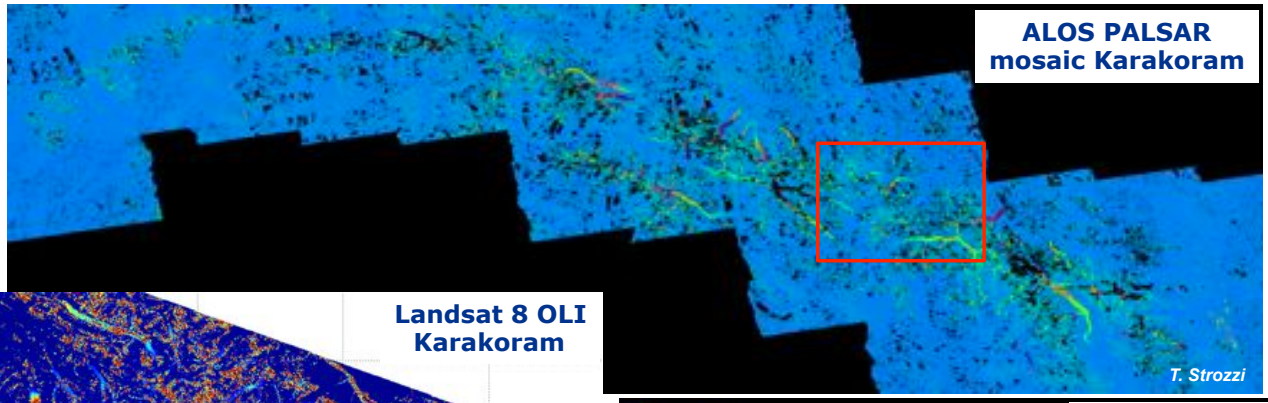
Velocity: longest possible time series (FCDR)

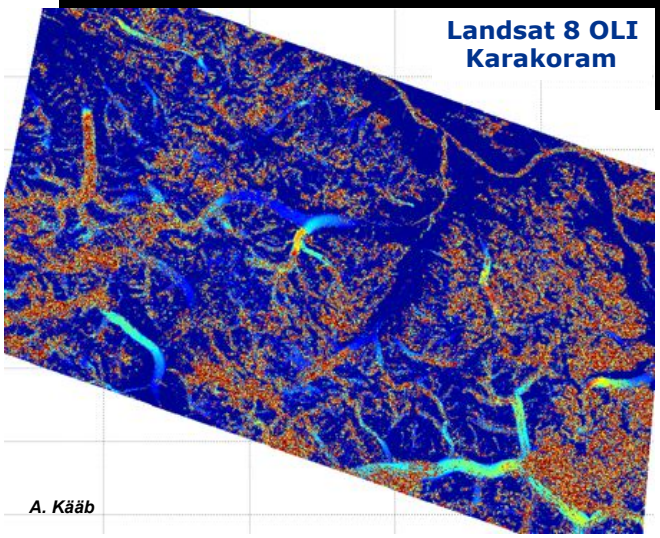


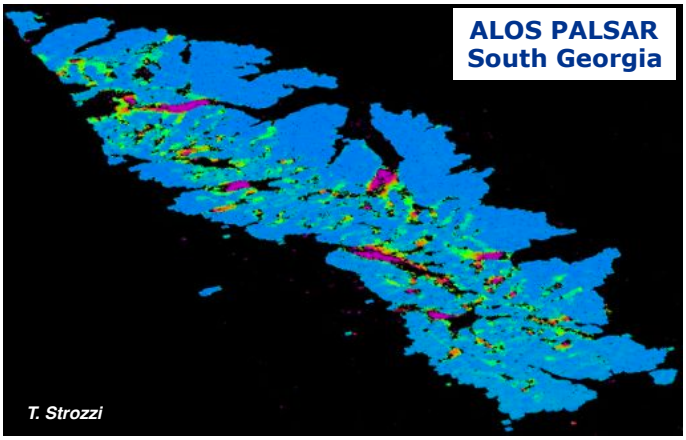
Velocity: Repeat large-area coverage



New velocity products

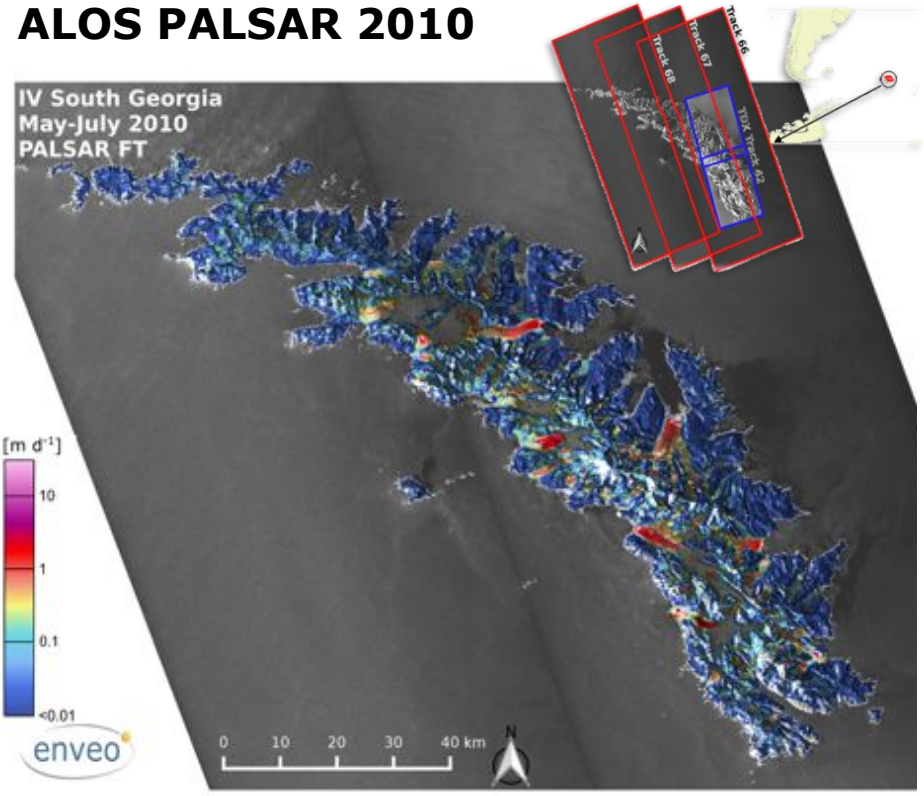


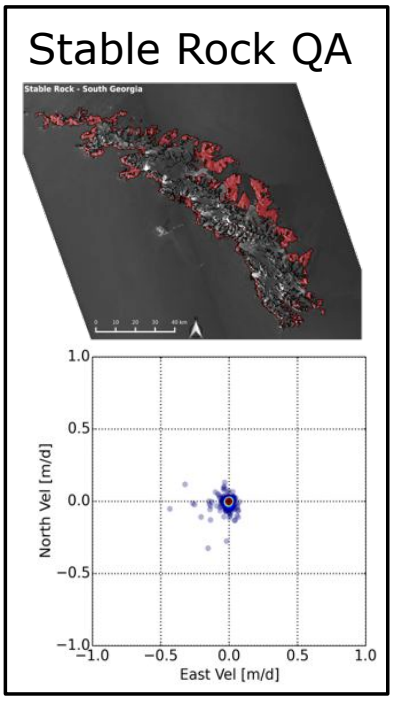




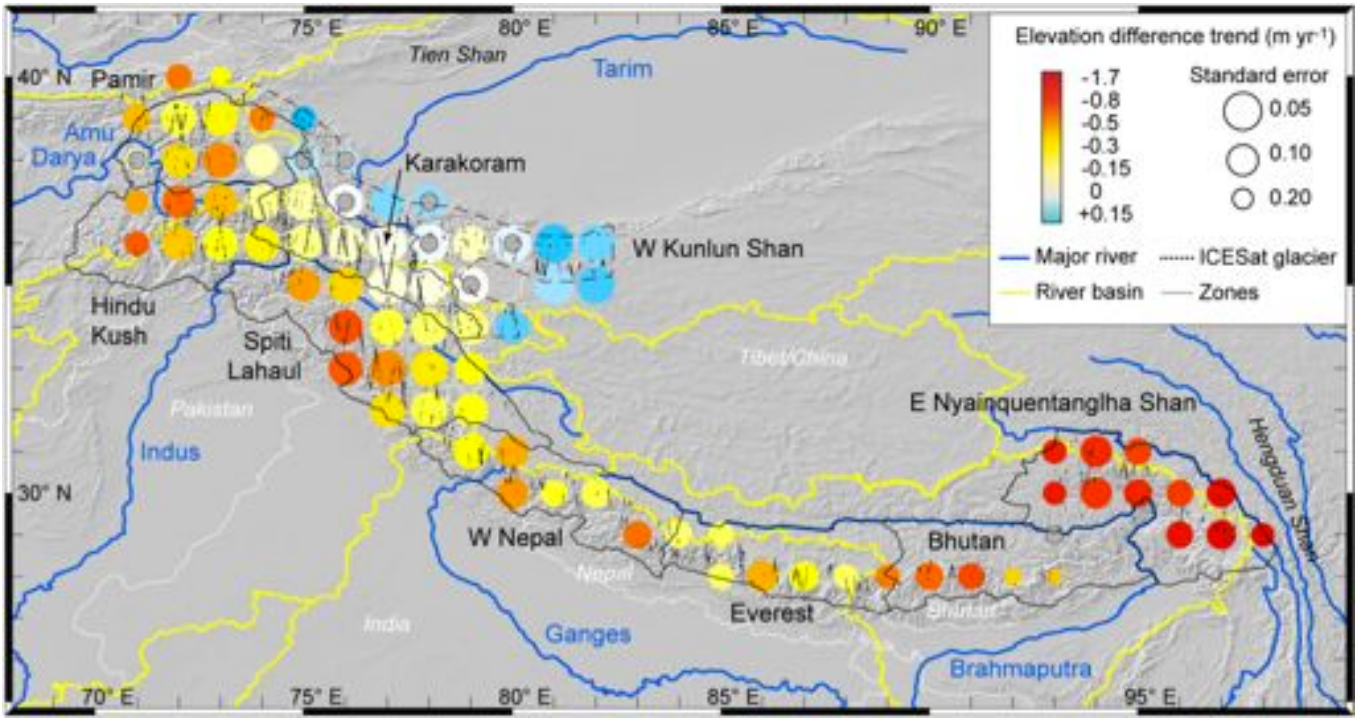
Quality assessment of generated products

ALOS PALSAR 2010



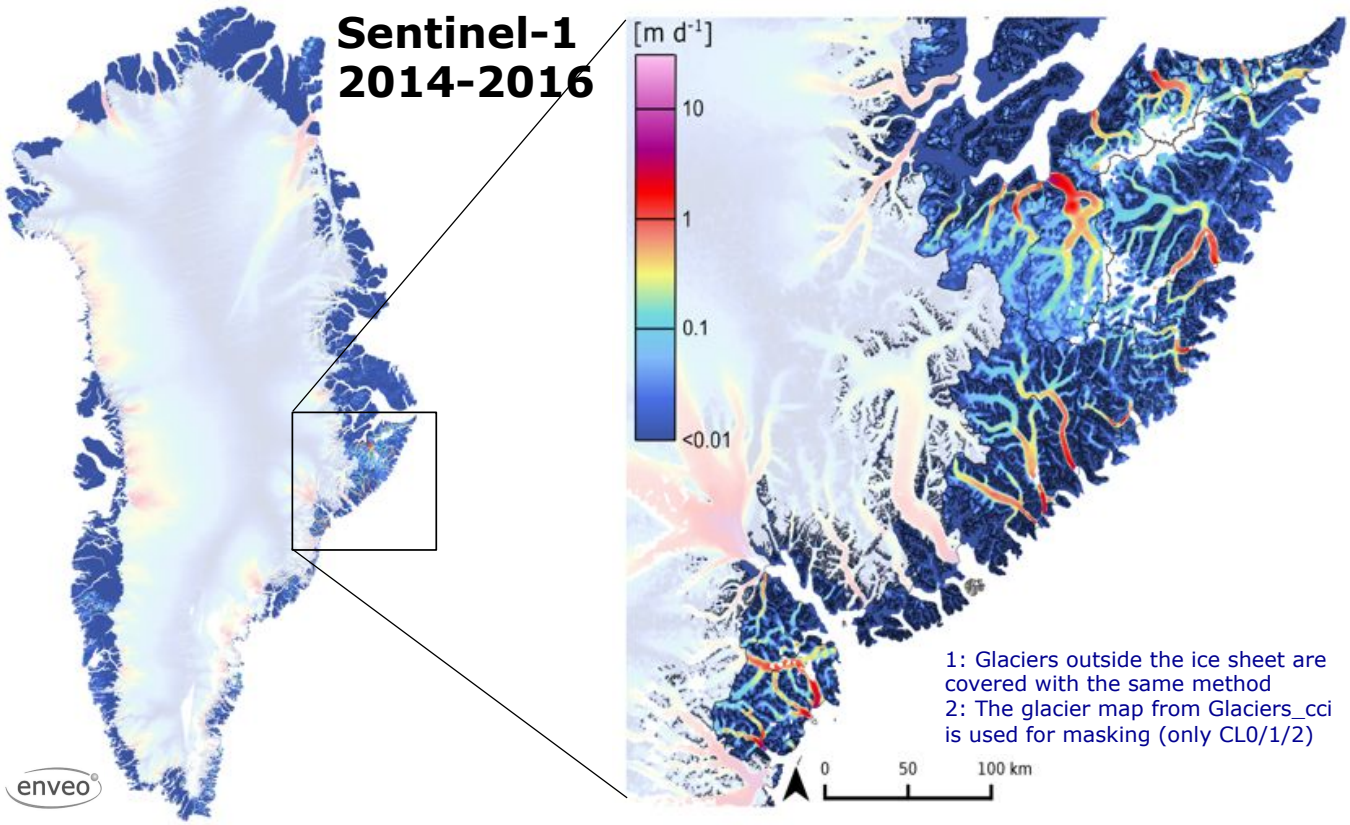


Elevation changes ICESat- SRTM DEM



Kääb et al. (2015)

Cross-ECV data production: Velocity Greenland

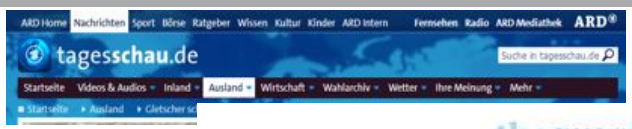


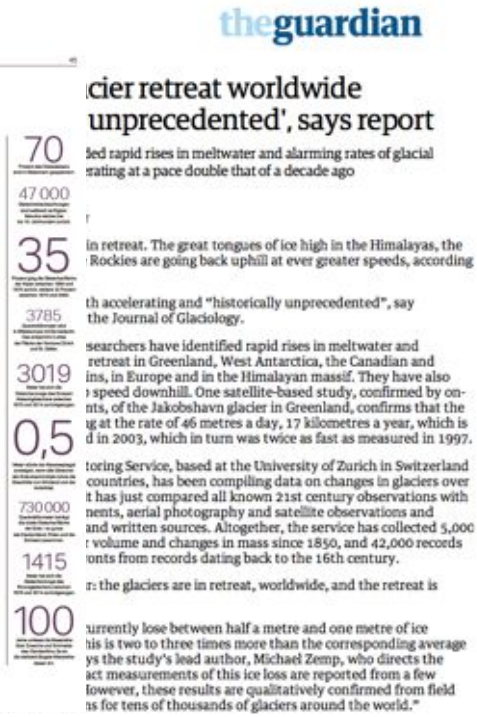
1: Glaciers outside the ice sheet are covered with the same method
2: The glacier map from Glaciers_cci is used for masking (only CL0/1/2)

Big media echo on unprecedented glacier decline

Historically unprecedented global glacier decline in the early 21st century

Michael ZEMP [1] Holger FREY [1] Isabelle GÄRTNER-ROER [1] Samuel U. NUSSBAUMER [1]





Summary

- **Data production (velocity Arctic, inventory API) for the selected key regions continued (=> CRDP2)**
- **New sensors (Sentinel 1/2, Landsat 8, Cryosat 2, PALSAR 2, Radarsat, TSX) were further investigated (algorithms)**
- **Change assessment for Karakoram glaciers and surge descriptions**
- **Clarification of inventory differences (RGI, GAMDAM, ICIMOD, CGI) described in draft document (RGI meetg. @ AGU: please finish soon)**
- **A large number of workshops/conferences with Glaciers_cci contributions took place (S2A, IGS, PSTG-5, SGM, AGU, AGM)**
- **Intense outreach activities (press releases & media feedback)**
- **CCI data portal & toolbox, Copernicus Climate Change Service (C3S)**
- **intense discussion on GLIMS executive board ('Core team')**