



Climate-Space X-ECV Karakoram Anomaly



Karakoram
anomaly

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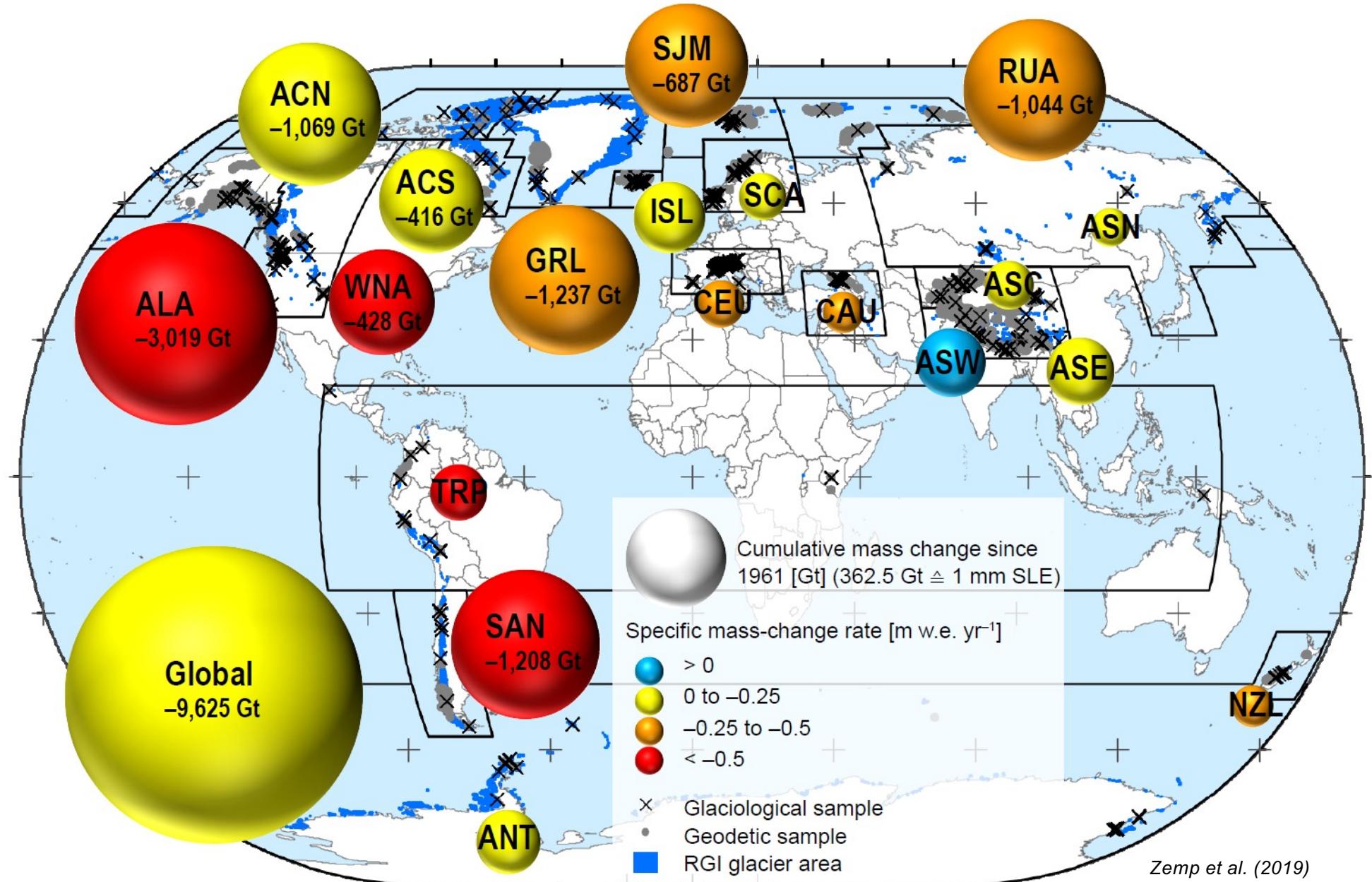
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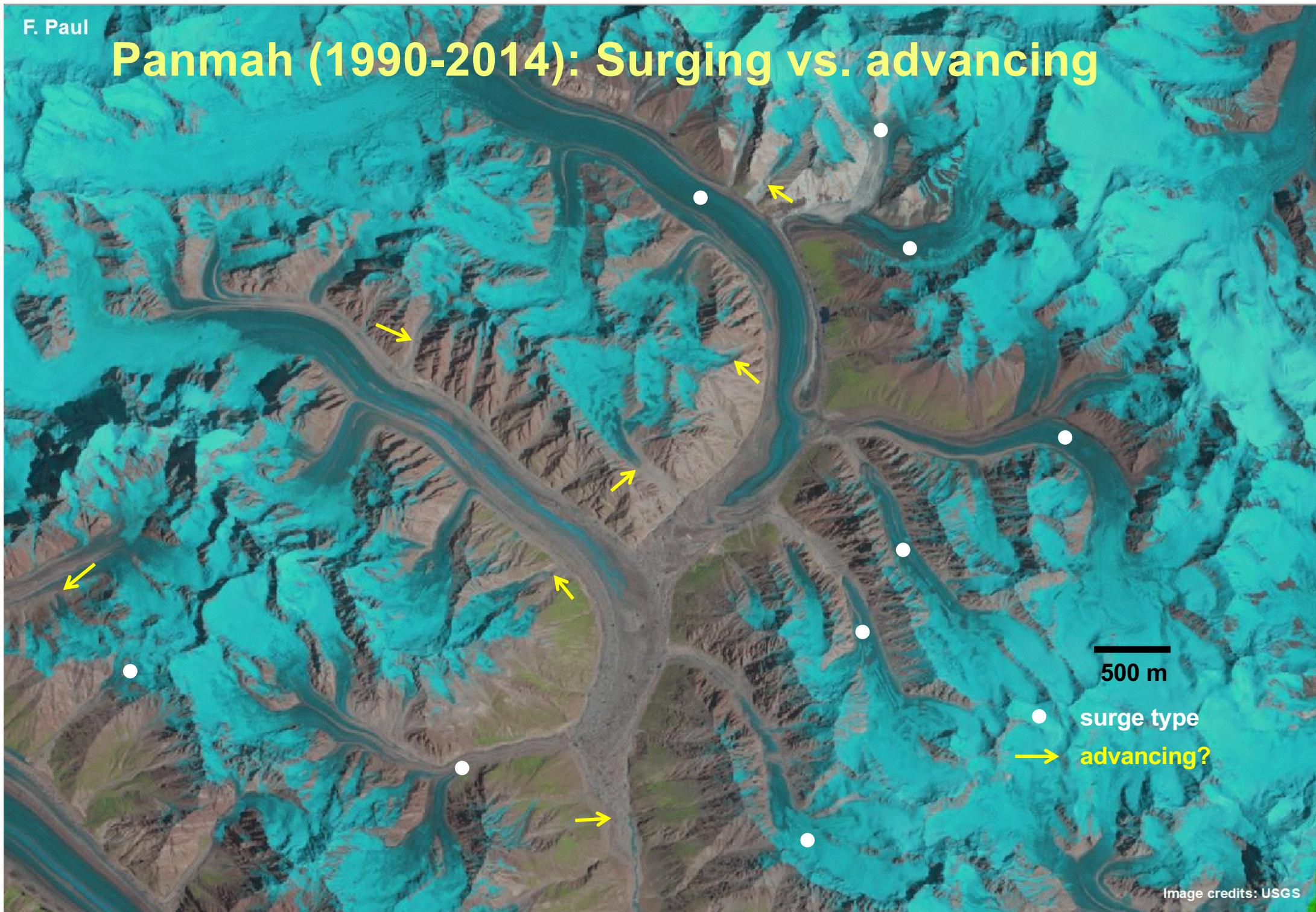
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Mass balance: What is the reason for the blue ball?

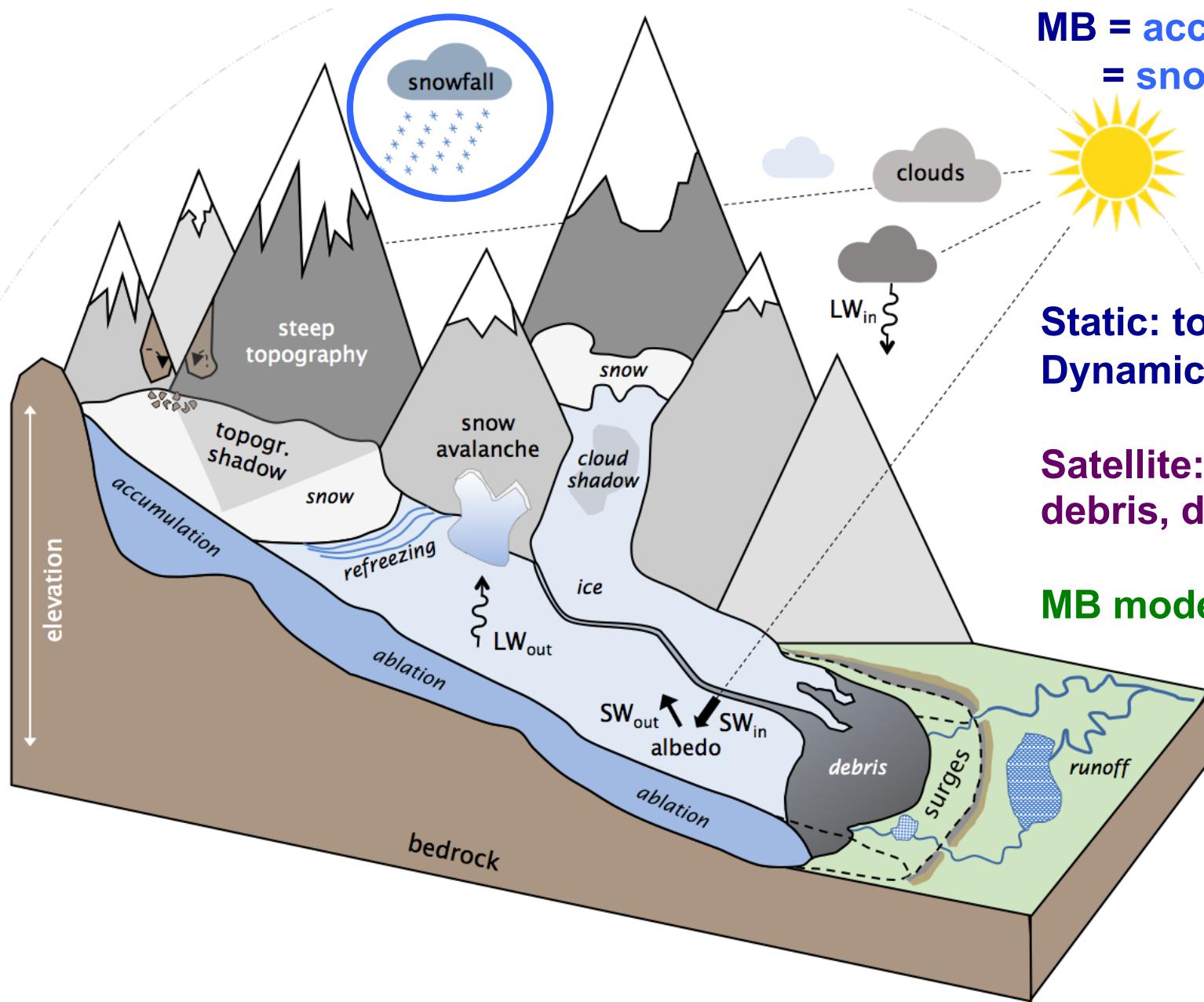


Panmah (1990-2014): Surging vs. advancing





Glacier mass balance and climate



MB = accumulation – ablation
= snow fall – energy balance

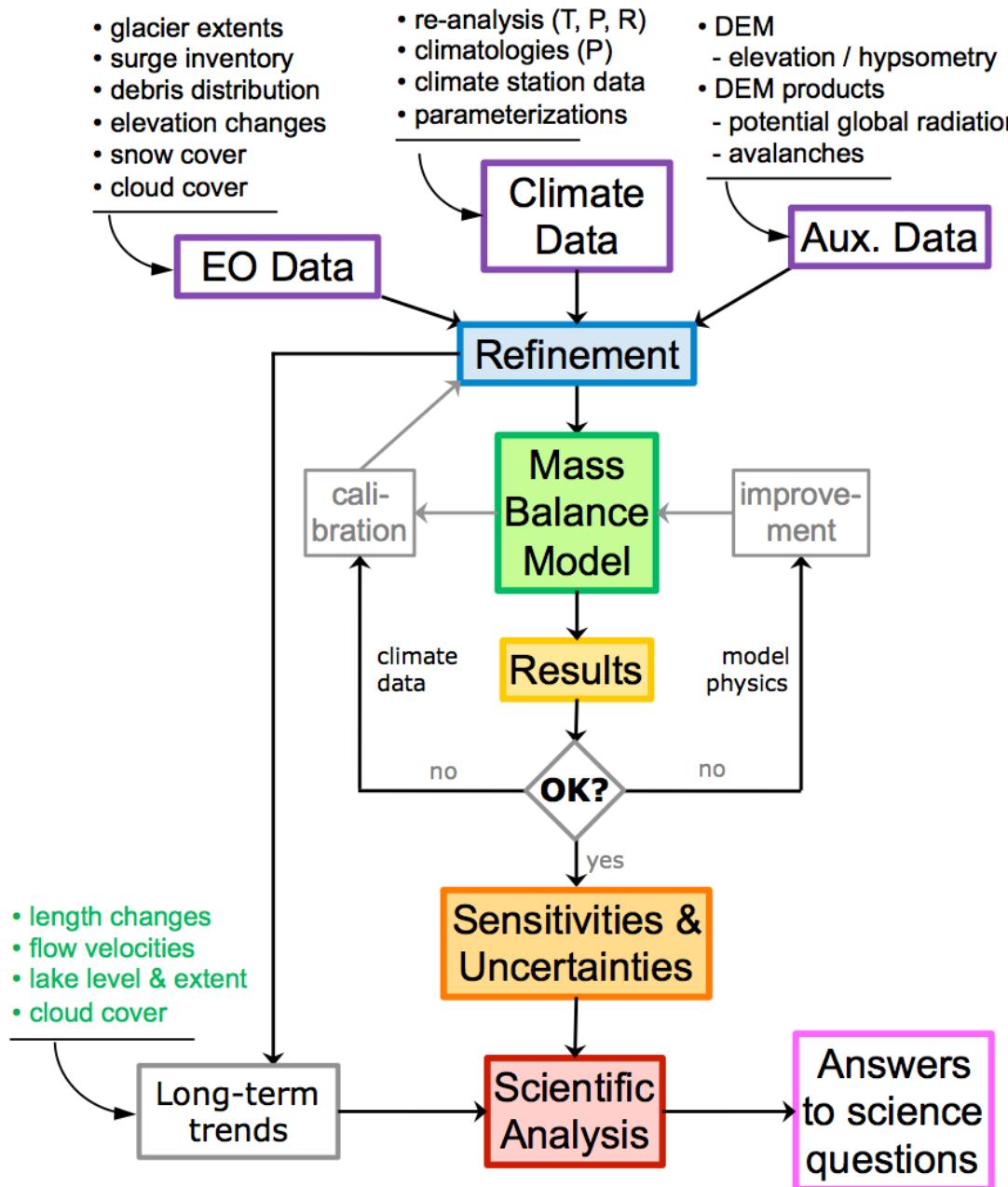
Static: topography (DEM), extent
Dynamic: meteo data (reanalysis)

Satellite: snow cover, albedo, debris, dh/dt, flow velocity

MB model: combines all parts



The principle set-up of the project



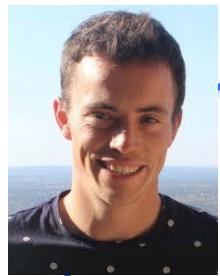
- We need EO, climate & DEM data
- They come in a range of formats, resolutions, time periods => refinement
- A distributed glacier mass balance model is assimilating all data
- Improve results by adjusting model physics or climate data
- EO data serve for model cal/val
- If ok, calculate mass balance sensitivity & uncertainties of input / output data
- Determine long-term trends & perform scientific analysis to answer questions

The team of the X-ECV Karakoram Anomaly project



Mass balance
modelling

Lander van Tricht



Matthias Huss



glacier
outlines

Frank Paul



Andi Kääb



elevation change
re-analysis data

Désirée Treichler



Thomas Nagler



Snow
cover,
database



Gabriele Schwaizer

Anna Maria Trofaier



GAMMA REMOTE SENSING



Tazio Strozzi

velo-
cities



Fabien Maussion

climate
models



Rainer Hollmann

Cloud
cover



Christophe Fatras

Lake
levels

