



Climate-Space X-ECV Karakoram Anomaly



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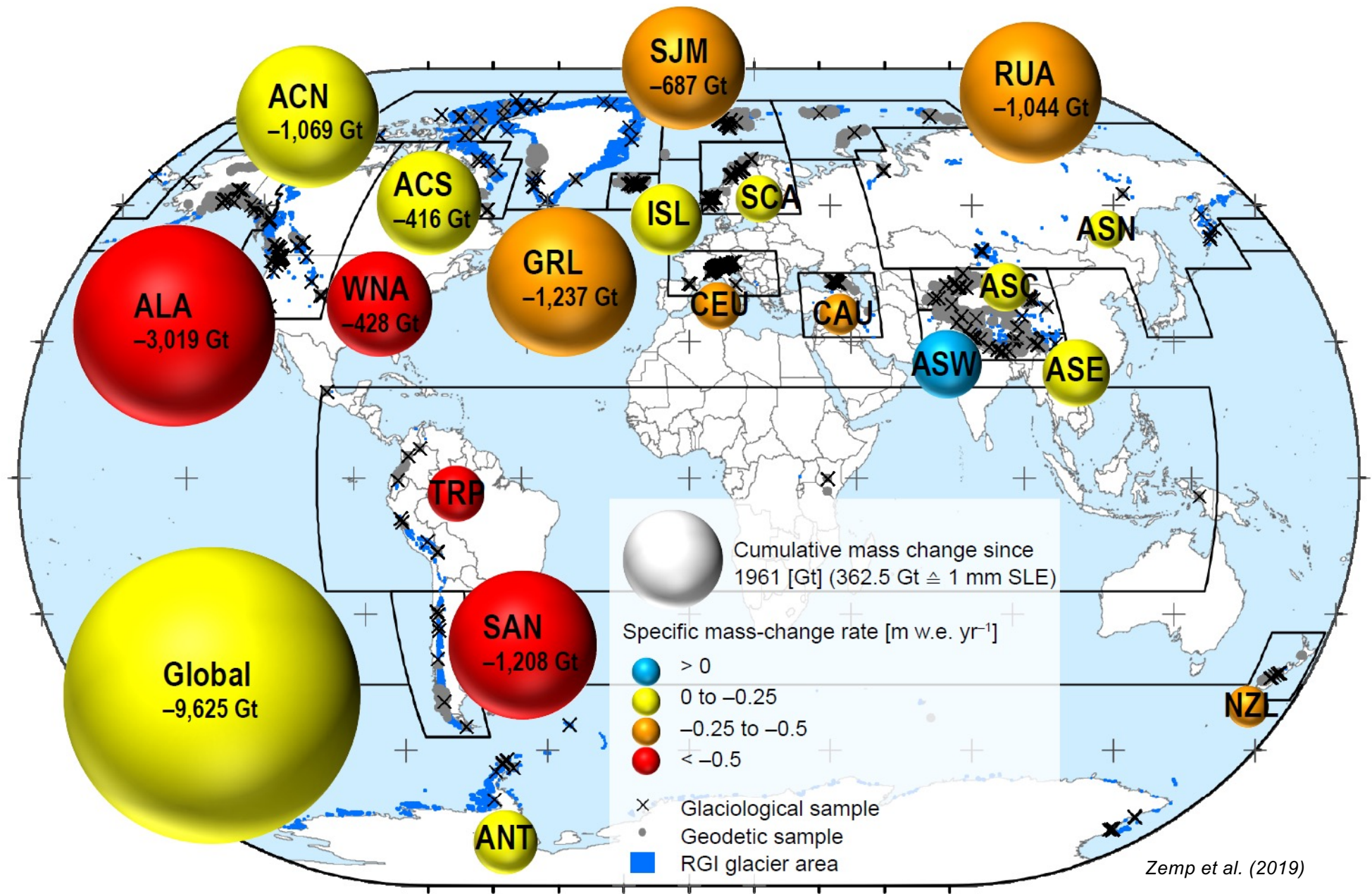


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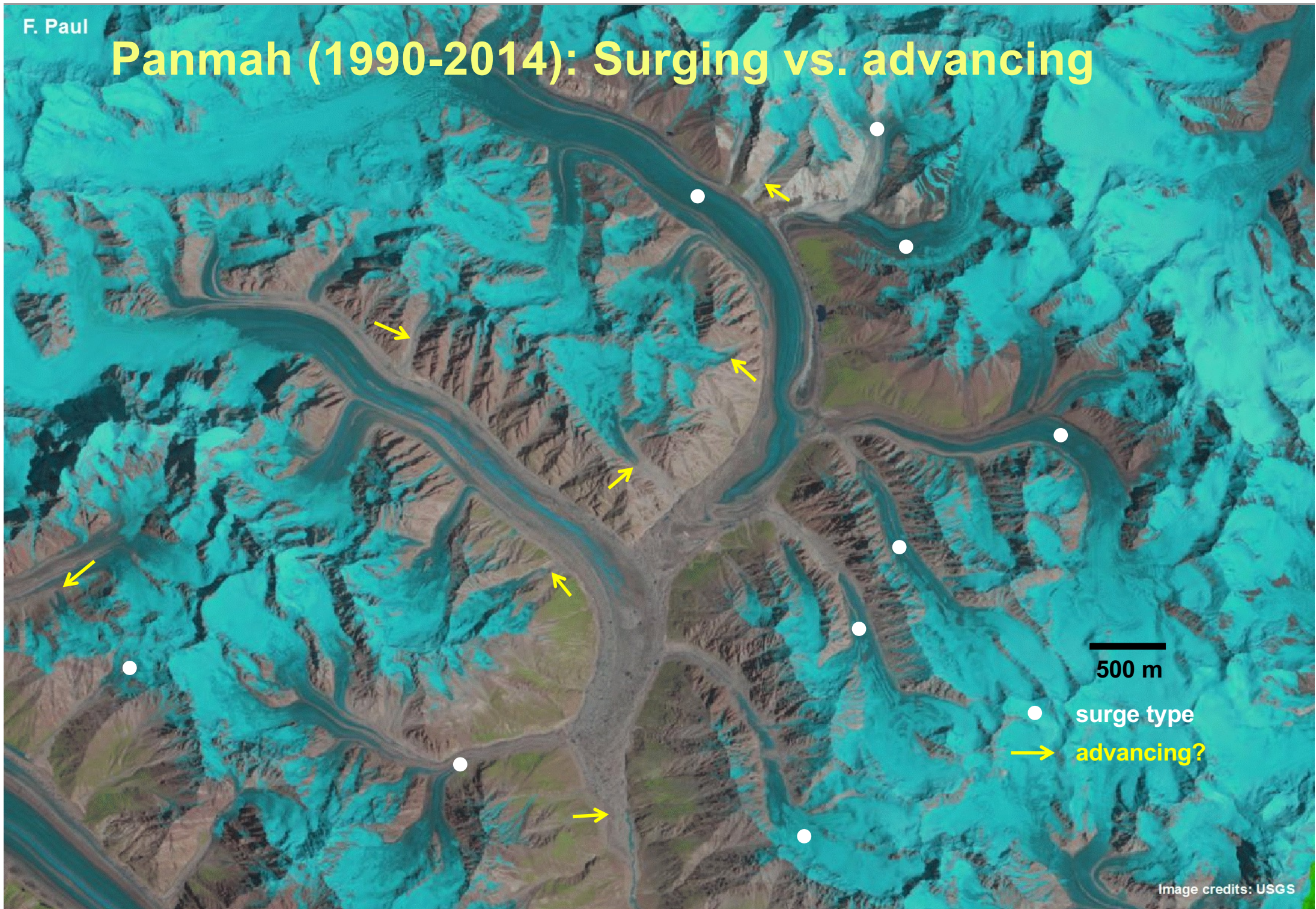


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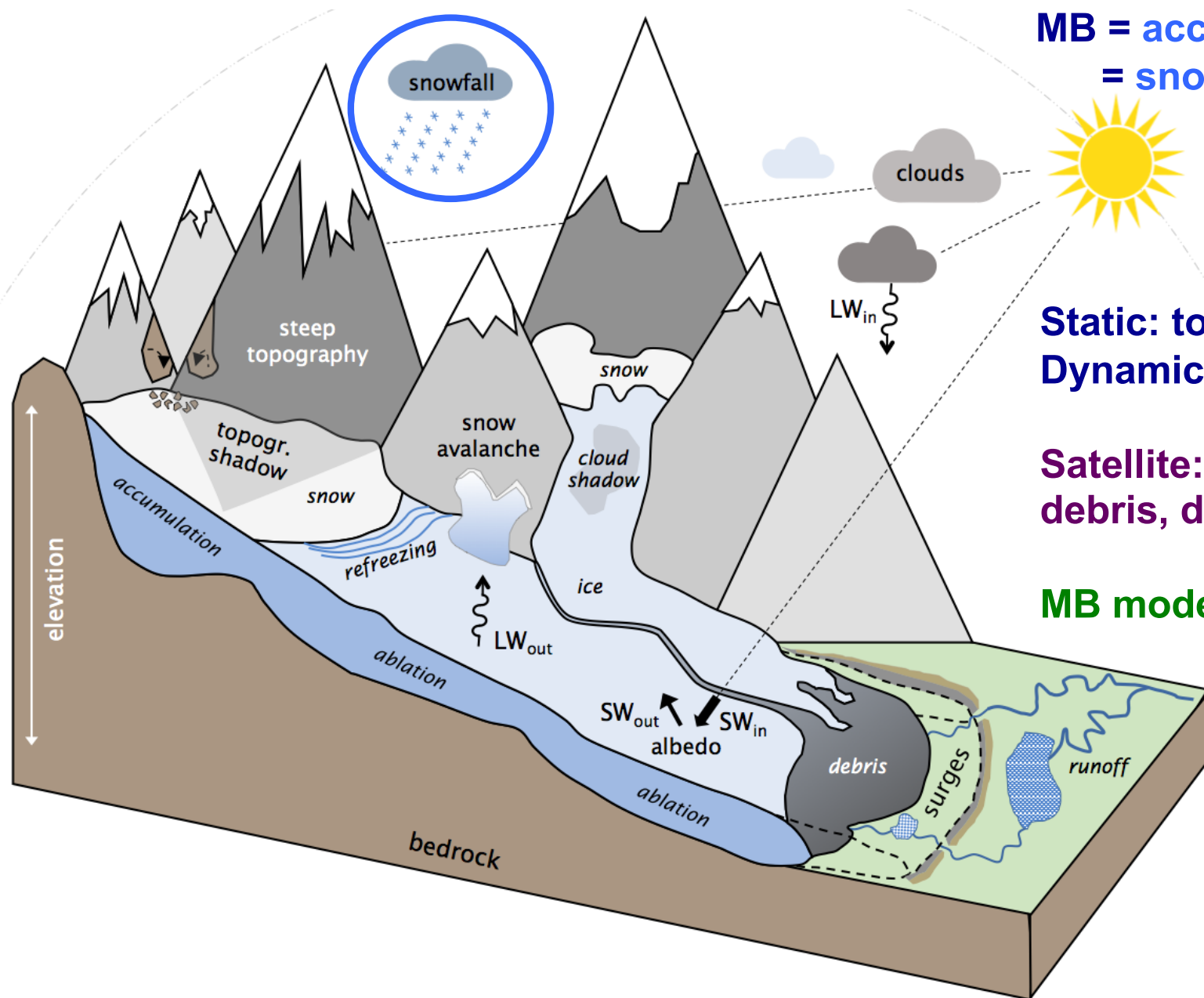
Mass balance: What is the reason for the blue ball?



Panmah (1990-2014): Surging vs. advancing



Glacier mass balance and climate



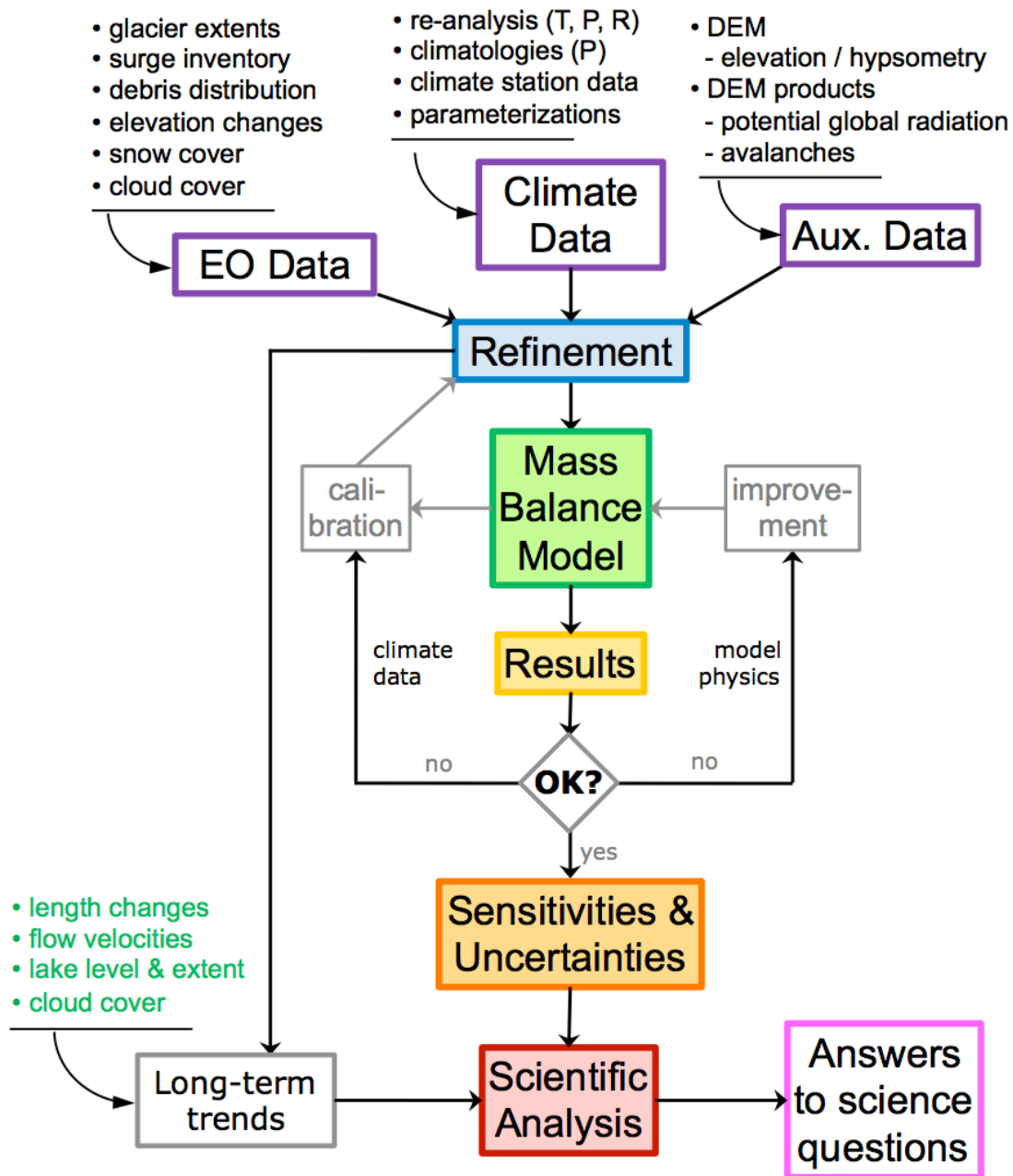
$$\text{MB} = \text{accumulation} - \text{ablation}$$
$$= \text{snow fall} - \text{energy balance}$$

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

