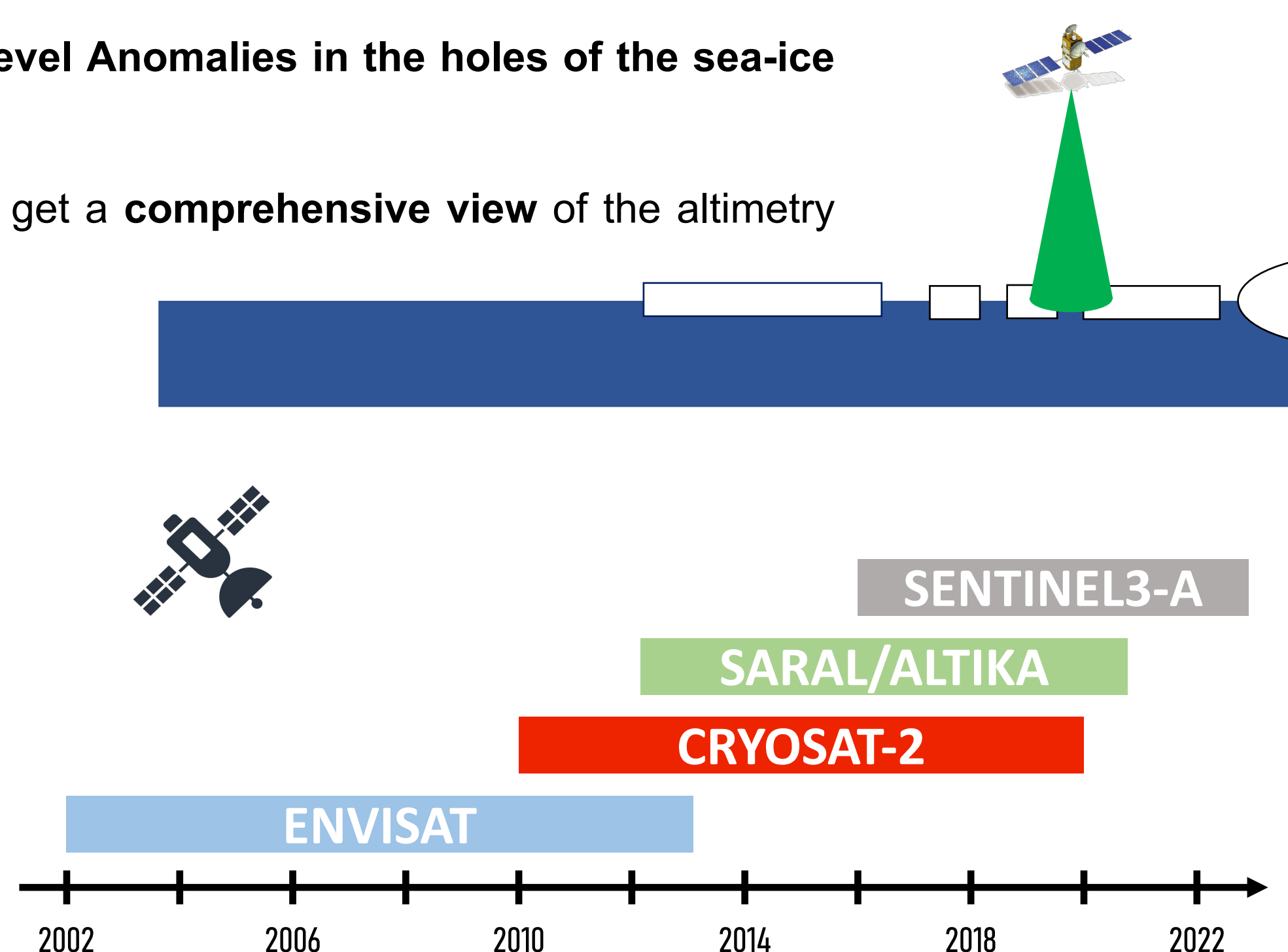


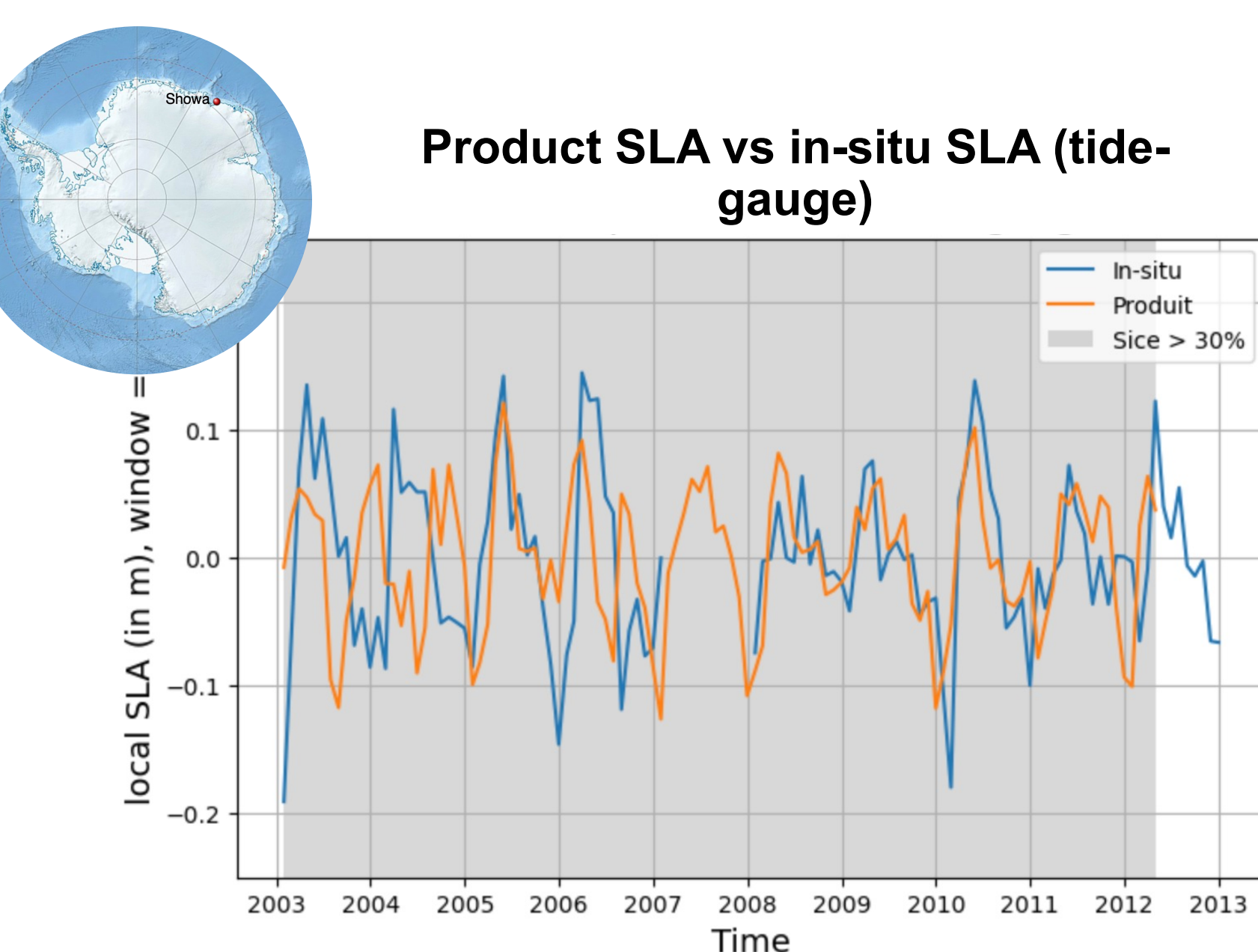
## Methods

- Now able to measure **to measure Sea Level Anomalies in the holes of the sea-ice cover** (also called leads).
- Lots of leads in the ice cover, so we can get a **comprehensive view** of the altimetry field by sampling only them.
- Building on that idea, we **reprocessed 4 satellite missions**.
- We combine open-ocean and leads data to **obtain the product on the right** of the poster.
- The algorithm developed for the study **ensures physical continuity** between the two domains.

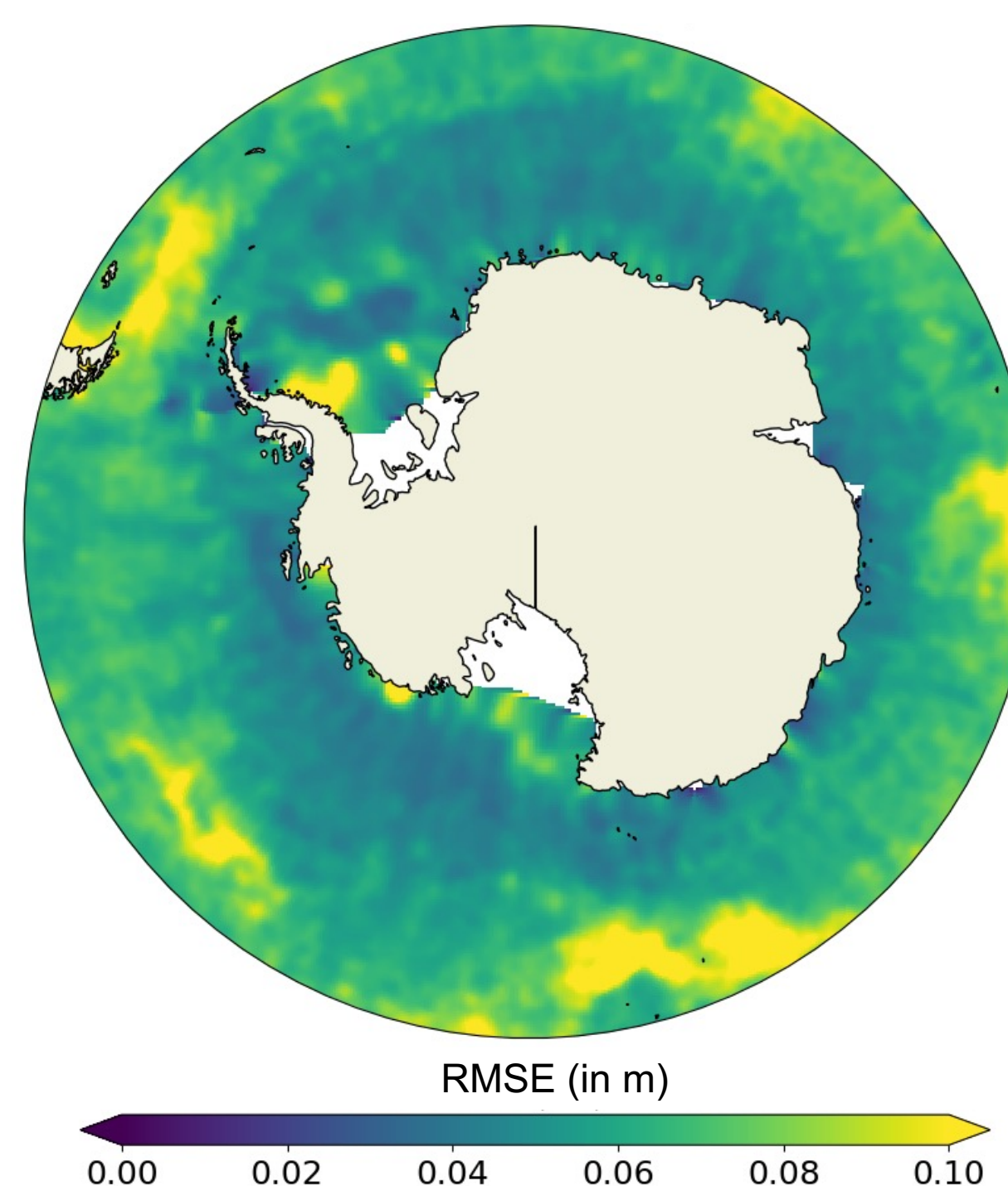


## Gaining trust in the product

- Qualitative validation : **Eye test of the product** which shows good continuity at the open-ocean/sea-ice interface. Comparison with **in-situ** data gives **extremely good correlation** (bottom left plot).
- Quantitative validation : **Computing the delta** between raw SLA measures by the satellite C2 and a map obtained with Envisat data only. The **mean RMSE** of ice-covered regions is about **5 cm**, lower than the RMSE in the open-ocean (8 cm).



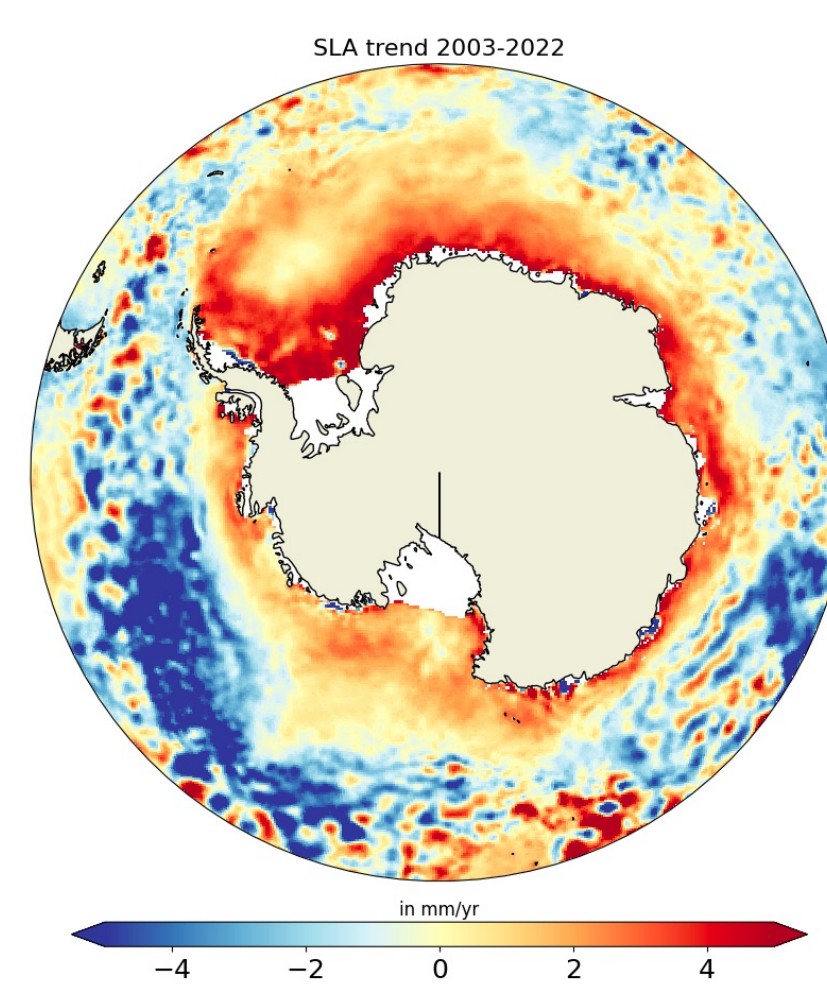
SLA of C2 along-track vs Envisat map



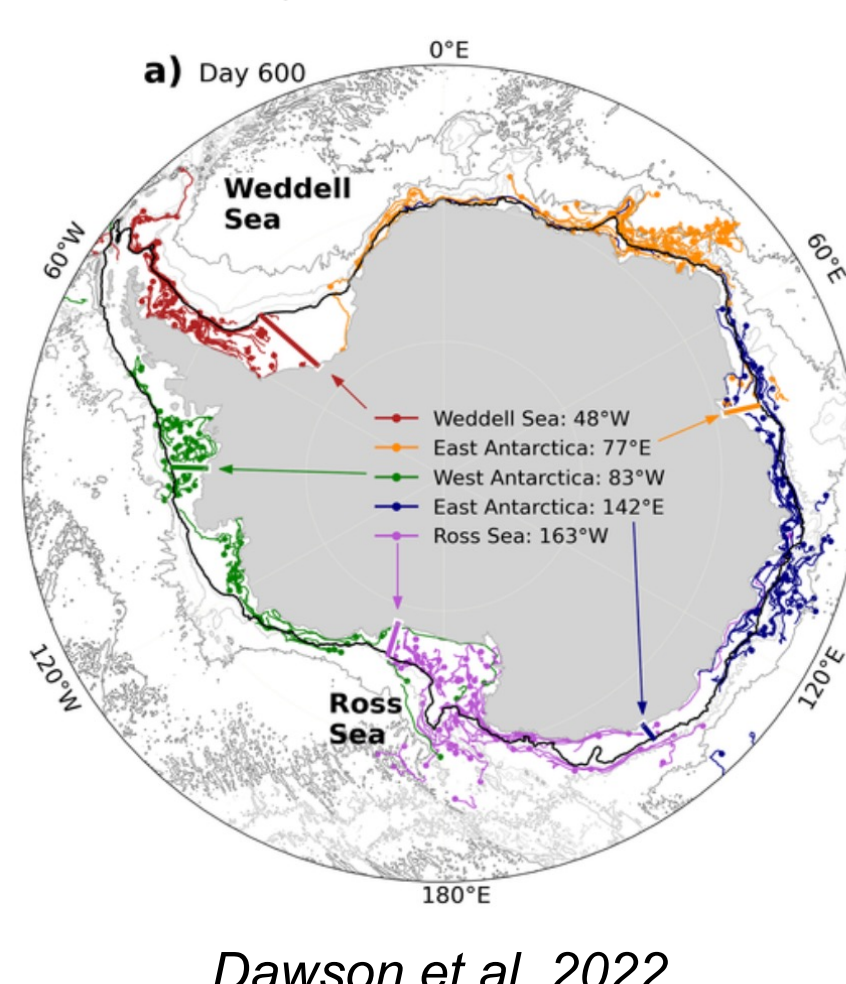
## Results & Perspectives

- We have now a **robust SLA product consistent in the ice-covered Southern Ocean**, spanning for the **first time from 2003 to 2022**.
- Observational product should be publicly **available by the end of the year**.
- Possible questions to be tackled in the rest of the PhD are numerous and will build upon the product.

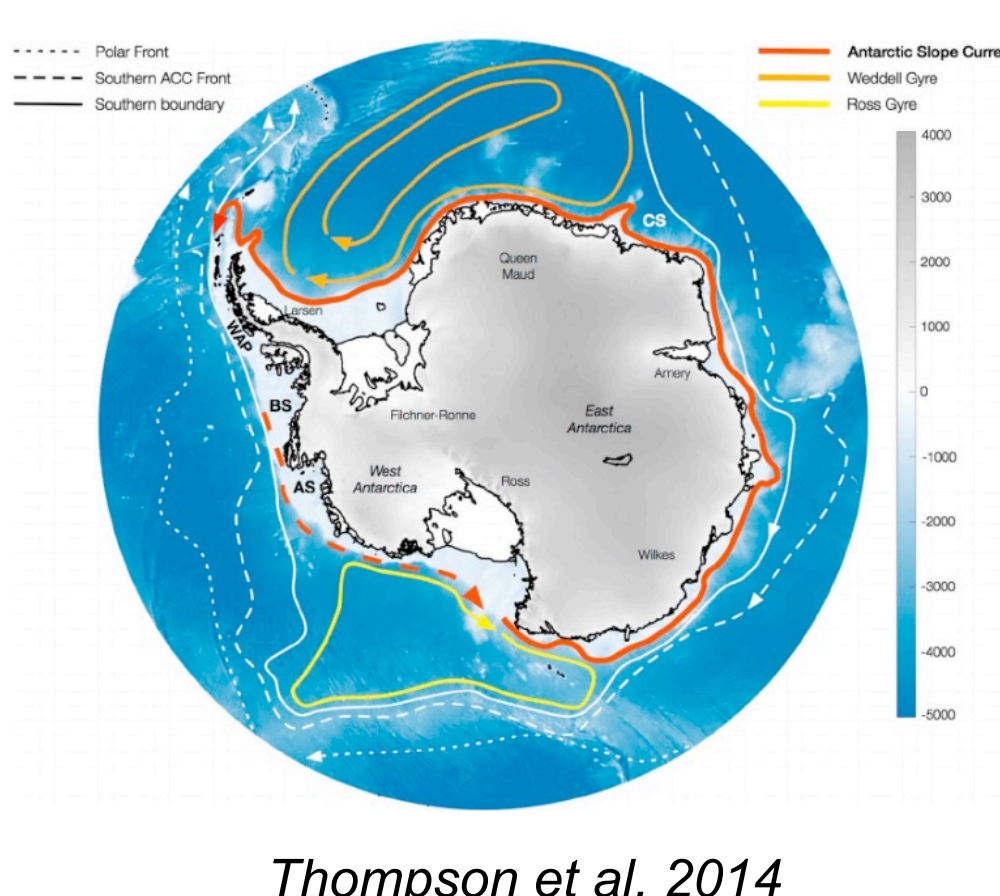
Sea-level rise trend & drivers



Connectivity between sub-basins



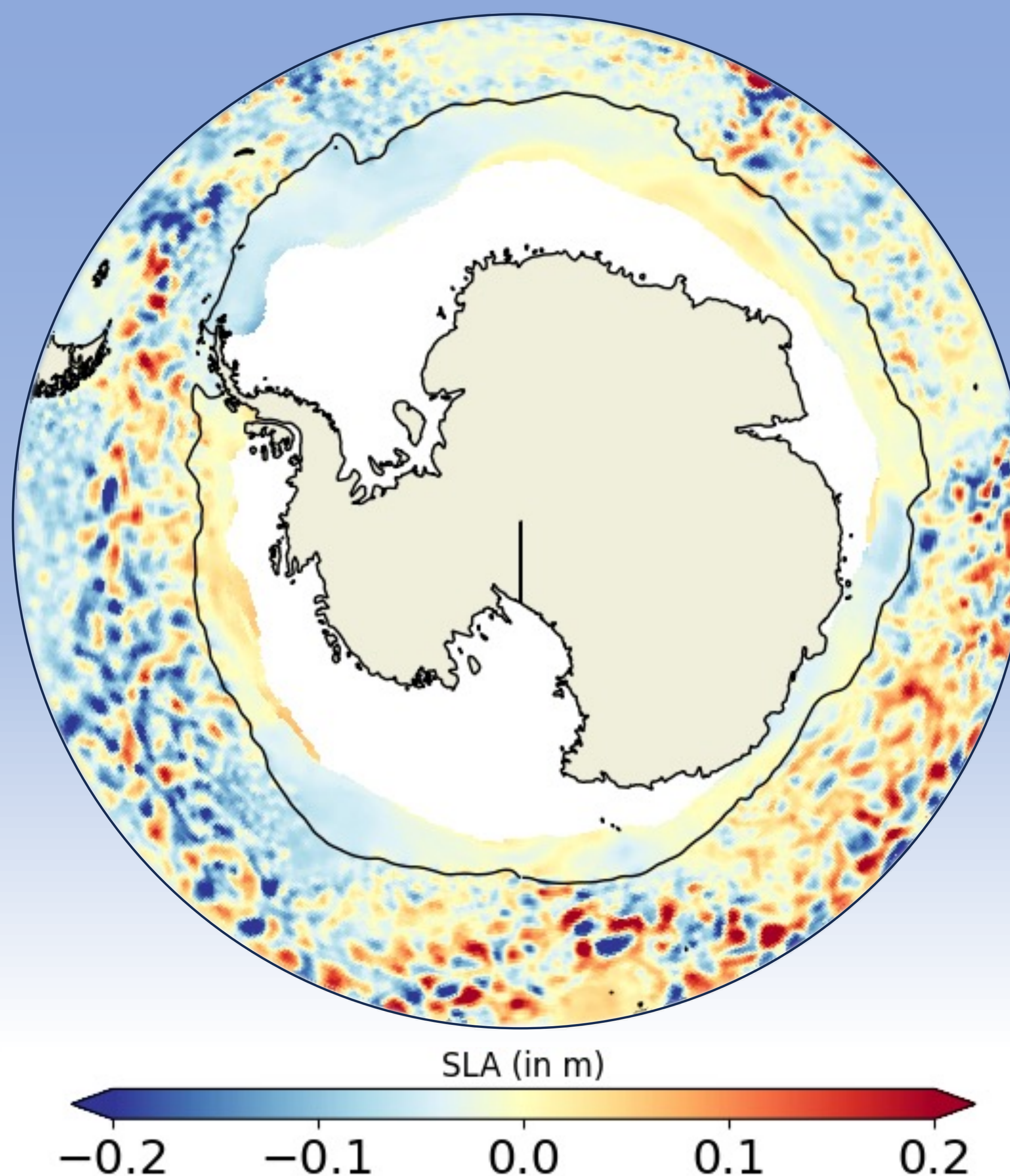
Interannual variability of the horizontal circulation



# Sea Level Anomalies from 2003 to 2023 are now reconstructed in the ice-covered Southern Ocean.

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DUACS SLA – 2010/07



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