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Context. Atmospheric specifications are needed to support the monitoring of the atmosphere with infrasound. They feed propagation simulations for source localization and characterization.

Challenge. Meteorological products are biased in the middle atmosphere where long-range propagation waveguides form.

Objective. Provide with means to assess relative performances of state-of-the-art atmospheric model's products in the middle atmosphere to support operational analysis, using microbaroms.

Results :

- Development of a microbarom observation operator.
- Proof of concept for diagnostics of NWP models relative performances (*Letournel et al. 2024, JGR*)
- Fully differentiated processing chain for data assimilation.
- Towards first experiments of data assimilation using synthetical observations.

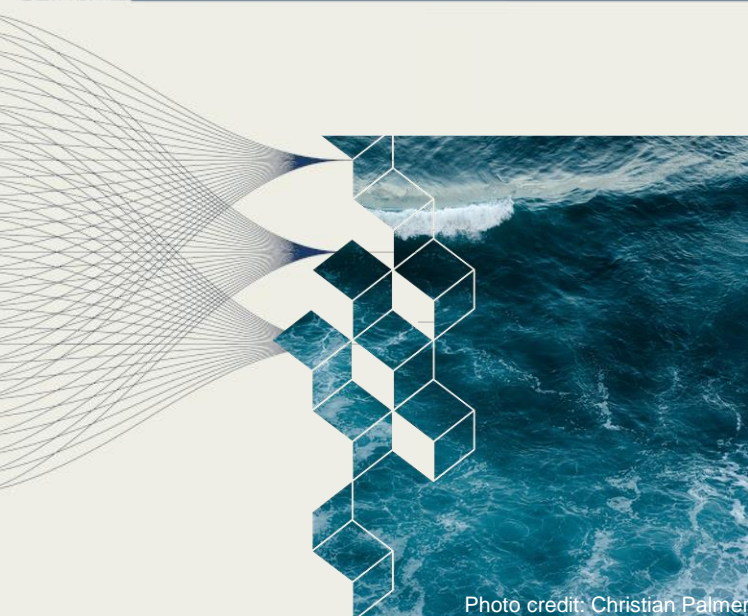
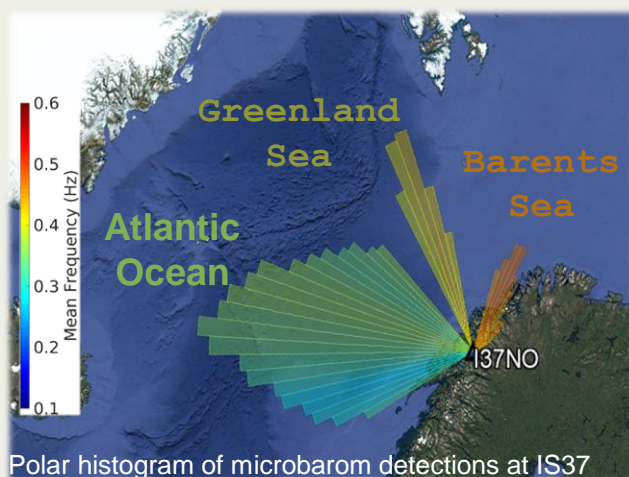
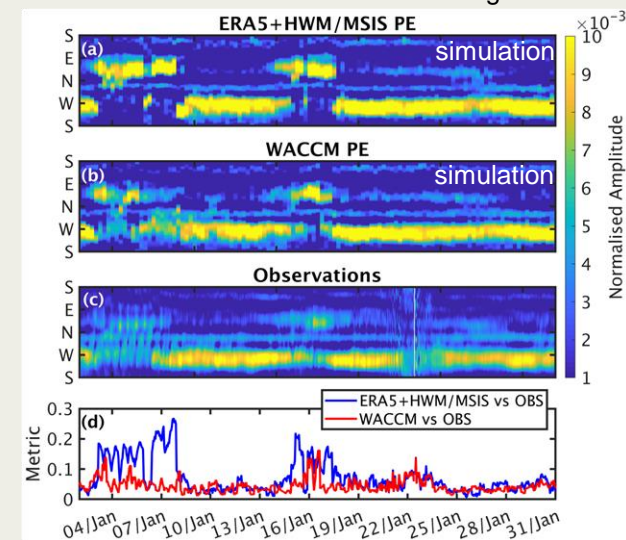


Photo credit: Christian Palmer



Polar histogram of microbarom detections at IS37

Microbarom azimuthal distribution through time



Metric comparing two atmospheric specifications (Letournel et al. 2014)