



Status of modelling capacities

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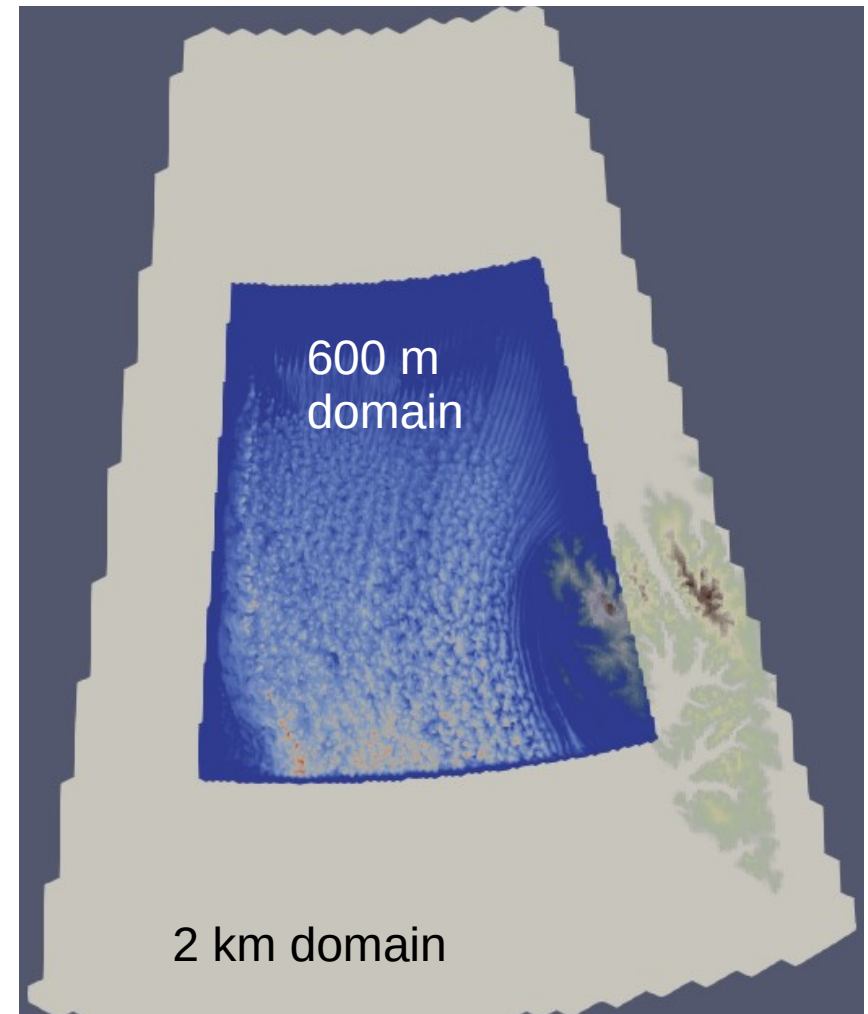
Experience during AFLUX and MOSAIC-ACA

Previous work

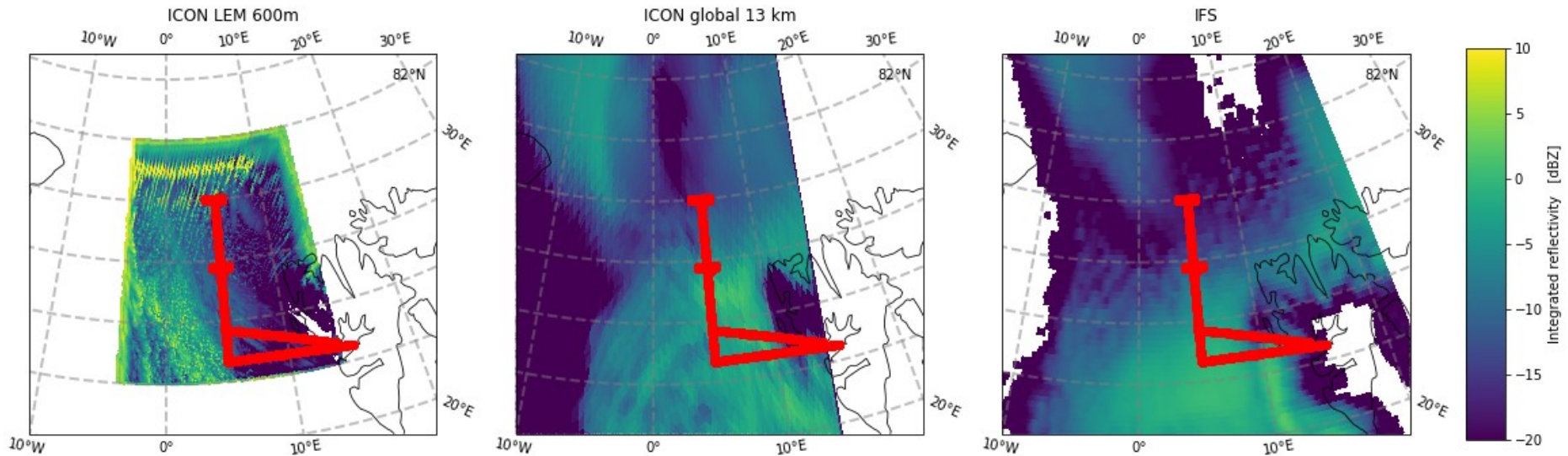
- During AFLUX approx. 2.5 days forecast with 2km and 600m resolutions
- For MOSAiC-ACA prepared to include high-res simulations into the mss tool

Challenges HALO-(AC)³

- Add instrument-simulators
- Calculate trajectories (follow air masses)
- Change/increase domain



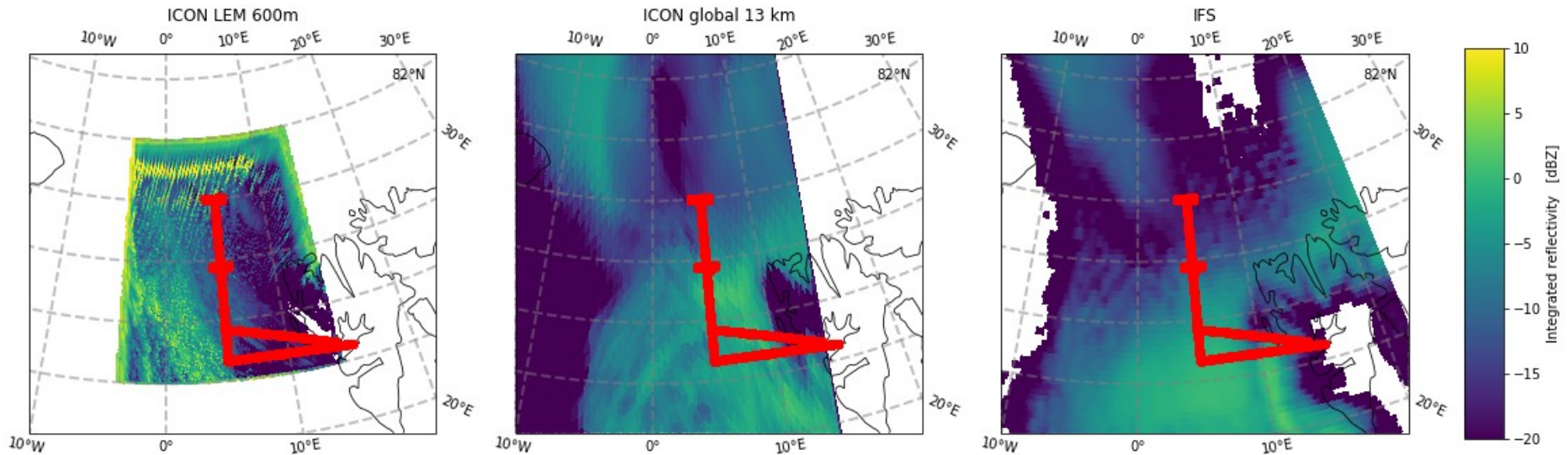
Microwave Forward simulations



Modeled cloud fields are forward simulated into radar variables using PAMTRA

Test case 31.03.2019 (AFLUX)

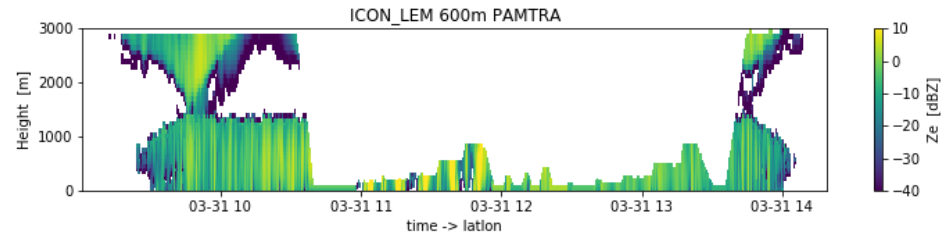
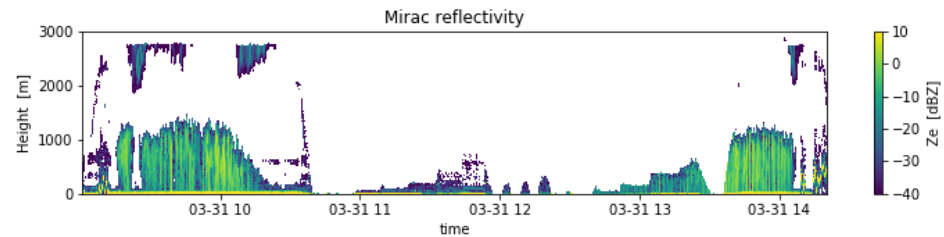
Microwave Forward simulations



Modeled cloud fields are forward simulated into radar variables using PAMTRA

Test case 31.03.2019 (AFLUX)

Compare radar reflectivity along flight tracks

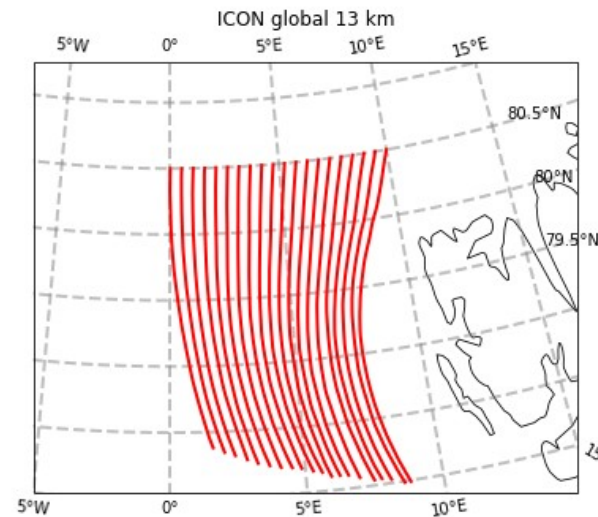
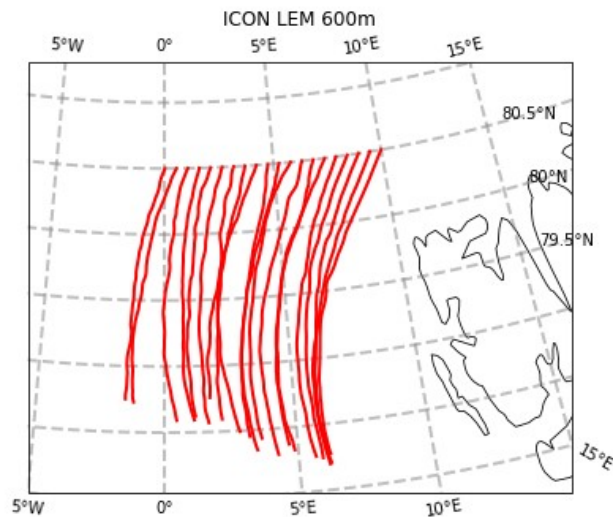


Air parcel trajectories

Air parcel trajectory simulations with LAGRANTO

Differences in the wind field at multiple horizontal scales (and time resolution)

Possible to track evolution of modeled cloud properties (including simulated measurements)



QUESTIONS

- What is needed for the planning?
e.g. Time schedule, domain, quantities ...
- Large domain (incl. Svalbard and Kiruna) or two small?
- Interest in testing potential flight patterns?
- More instrument simulator?
e.g. passive MW, others?
- How (should) we share the model simulation data?