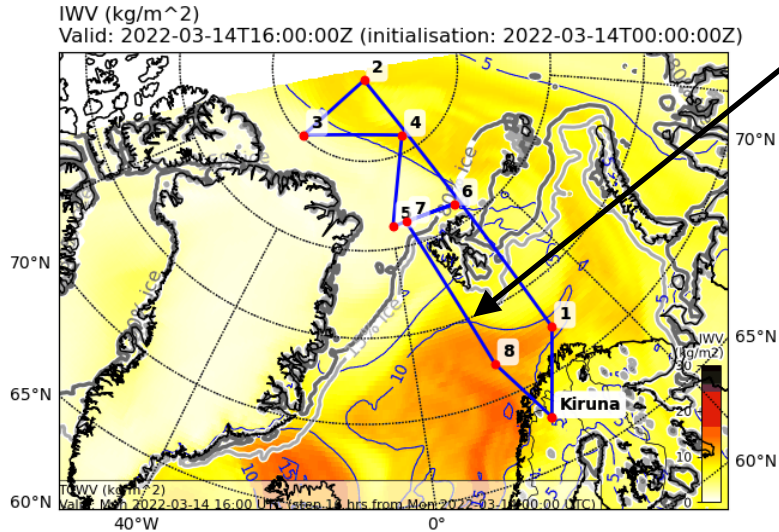


First glance at HAMP data from HALO-(AC)³

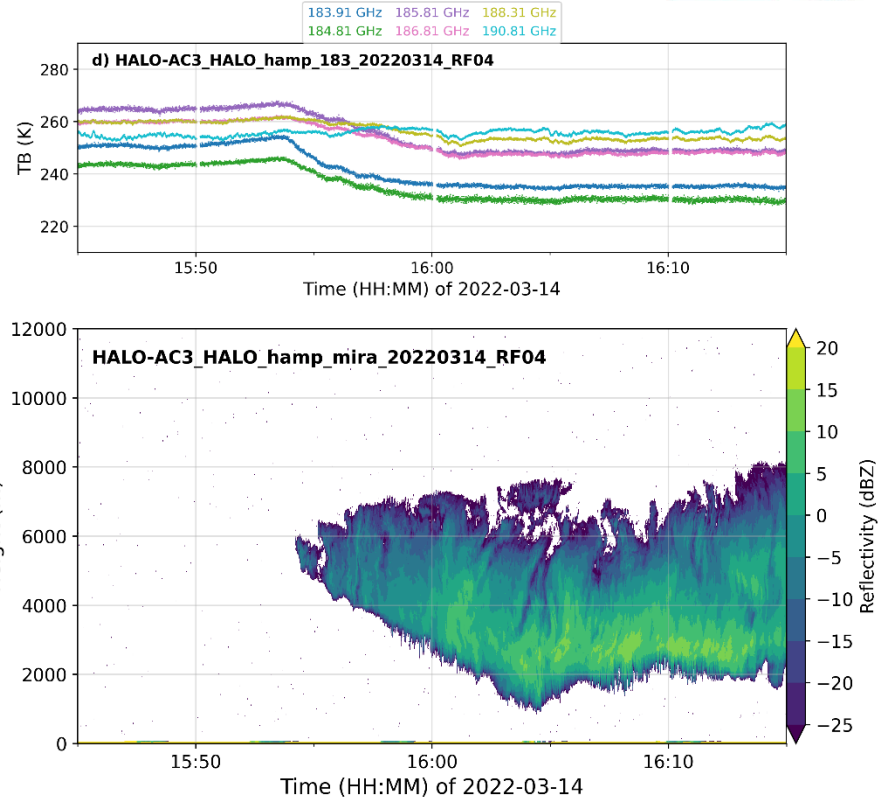
- **RF04:**
 - Moist air mass on the way back to Kiruna
- **RF08:**
 - Cloud streets in cold air outbreak
 - Old Shapiro-Keyser cyclone over Svalbard
- Comparison of HAMP radiometer with fwd. sim. dropsondes
- Crude LWP estimations

RF04: Moist air mass on the way back to Kiruna

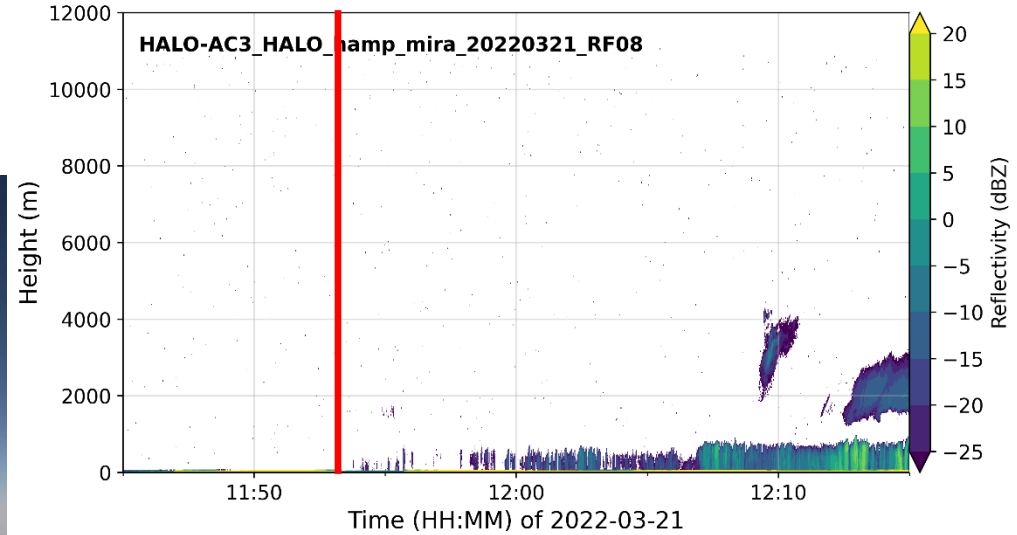
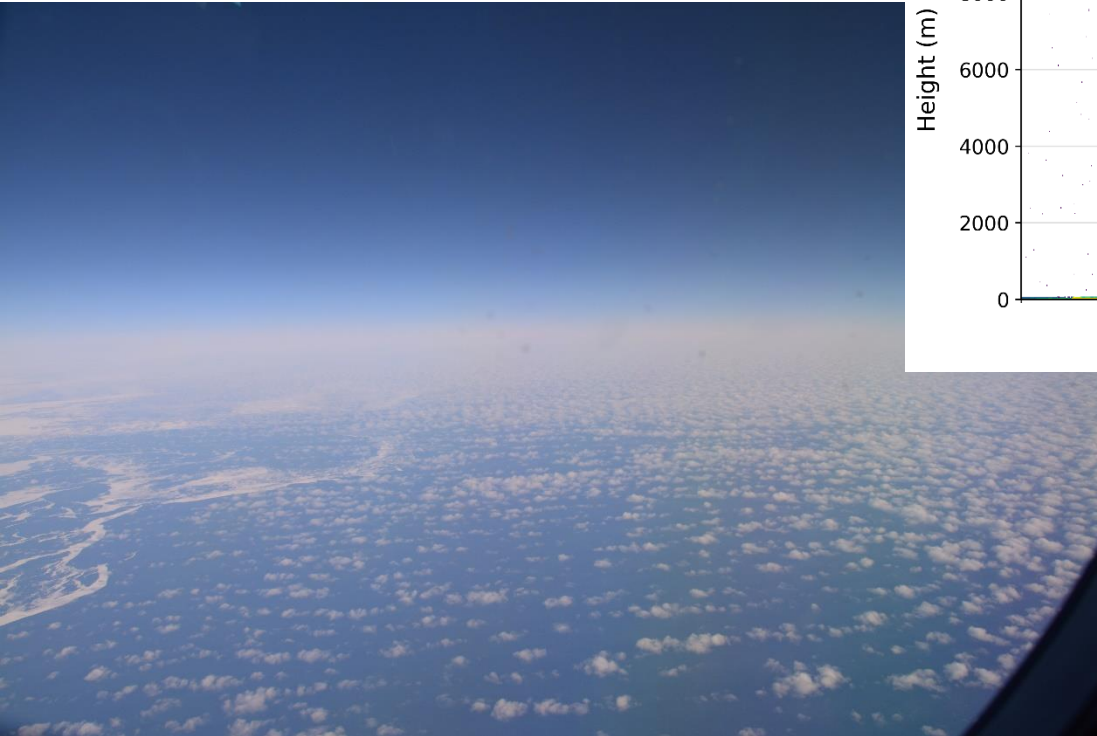
- Entry of moist air intrusion can be seen in both radar and radiometers:
 - Cirrus shield in radar
 - Decreasing 183.91 GHz TBs



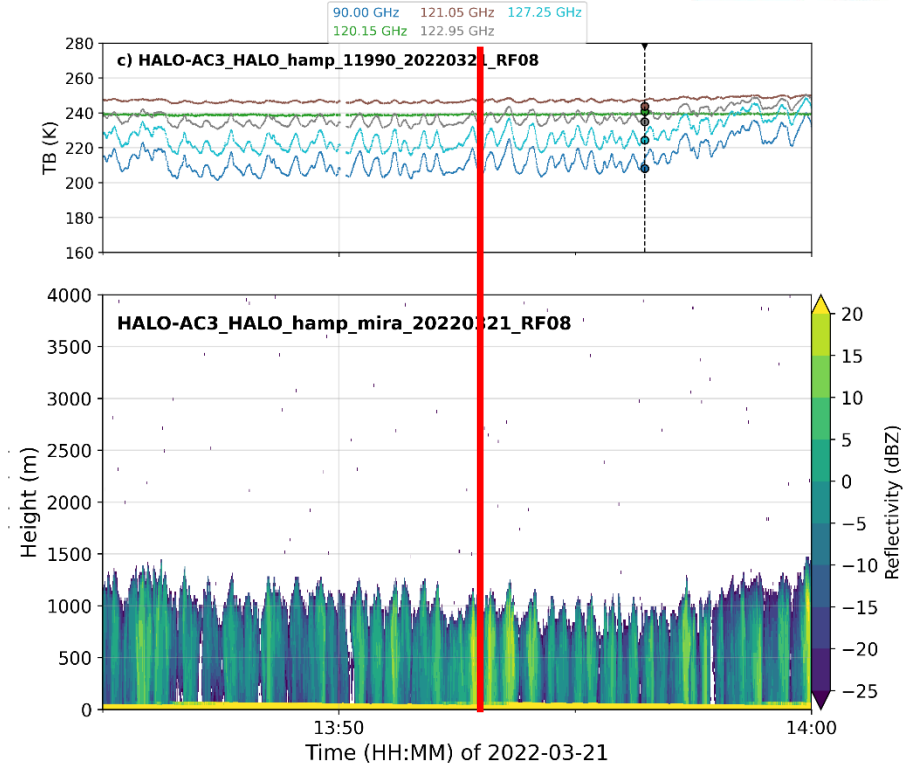
.O_AC3_20220314_HALO_RF04
G:77752350



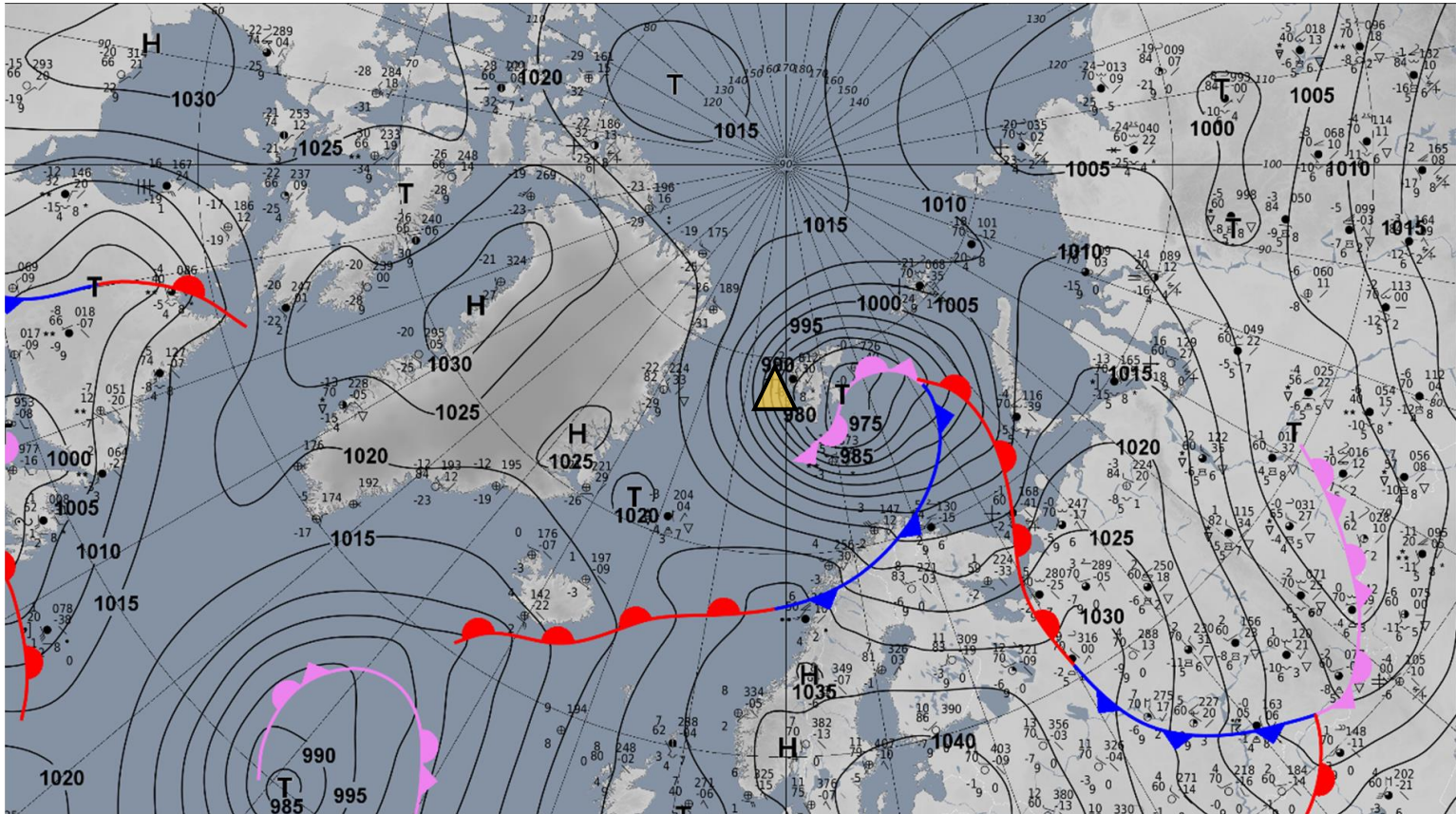
RF08: Cloud streets in the cold air outbreak



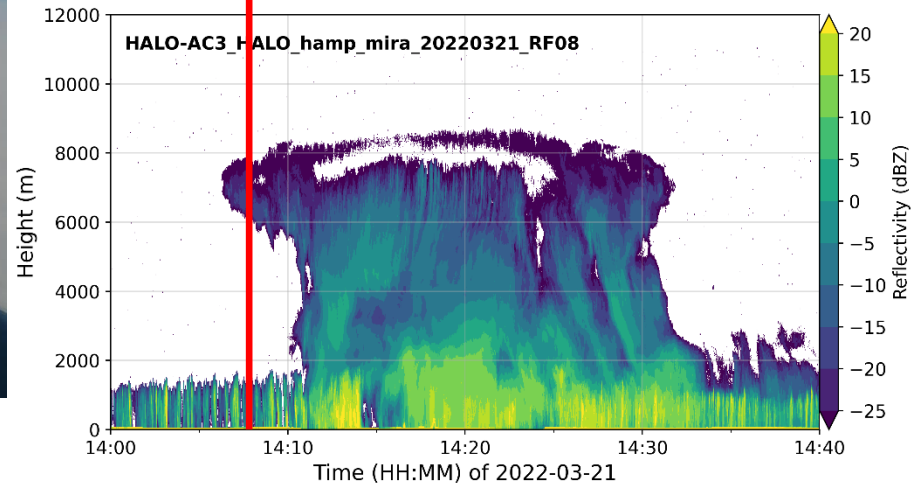
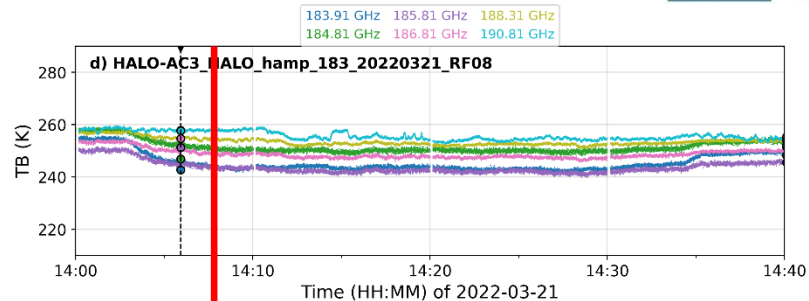
RF08: Cloud streets in the cold air outbreak



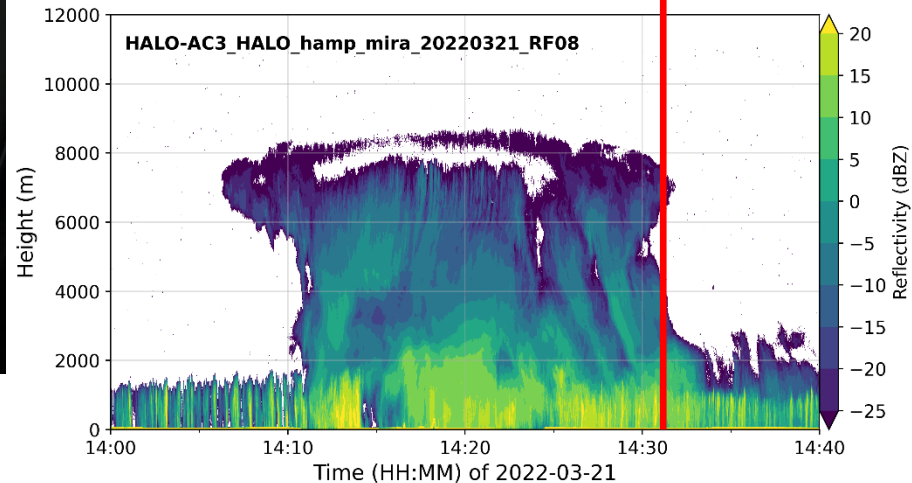
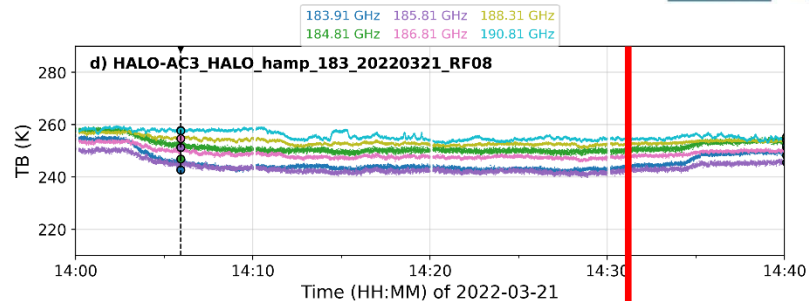
RF08: Old Shapiro-Keyser cyclone over Svalbard



RF08: Old Shapiro-Keyser cyclone over Svalbard



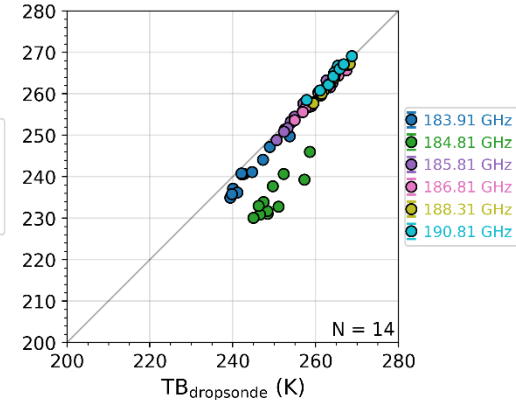
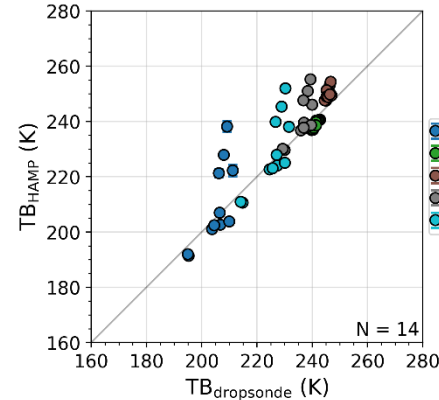
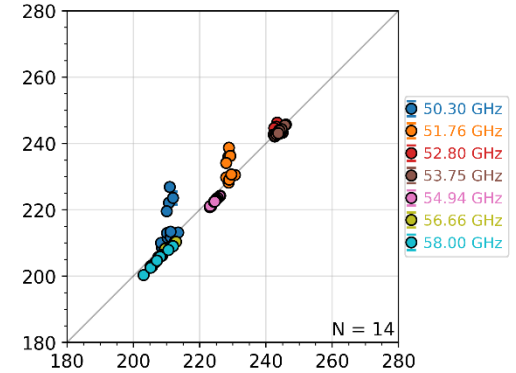
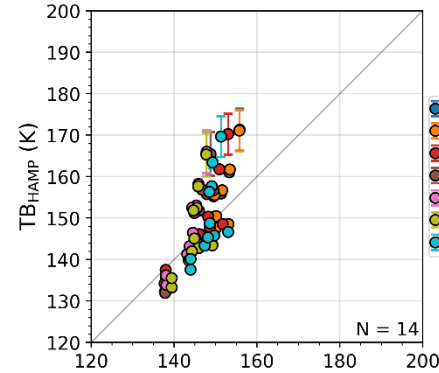
RF08: Old Shapiro-Keyser cyclone over Svalbard



Comparison of HAMP radiometer with fwd. sim. dropsondes

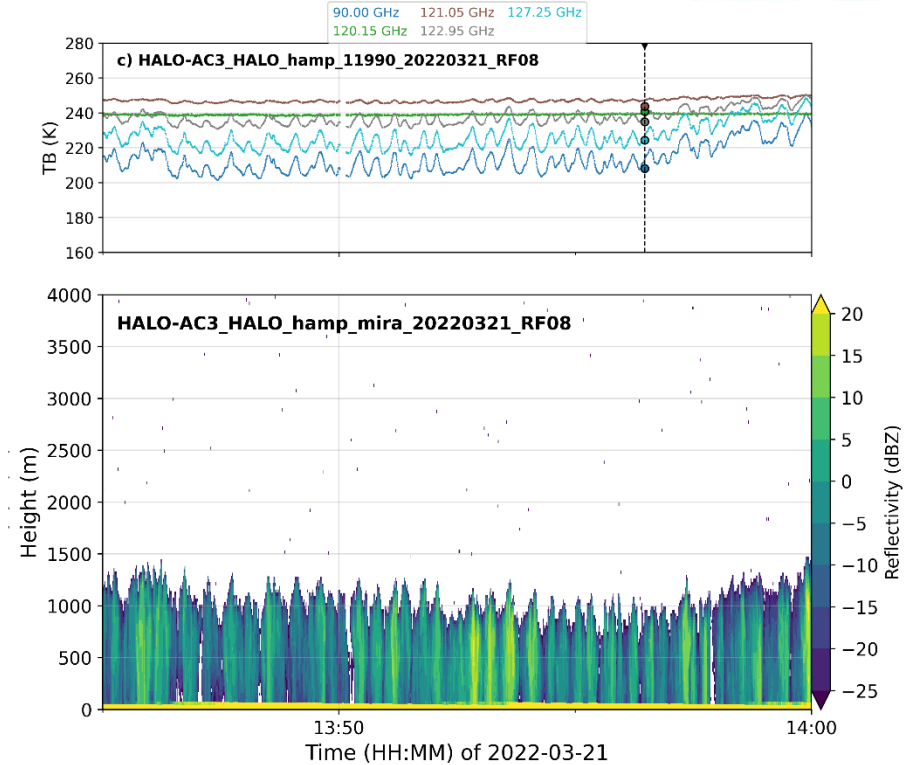
HALO-AC3_HALO_hamp_dropsondes_20220313_RF03

- Simulations with PAMTRA
 - No hydrometeors (\rightarrow cloud free)
 - Filtered out sondes over sea ice with TB threshold
- Emission signal by liq. hydrometeors in K, V and 119/90 channels



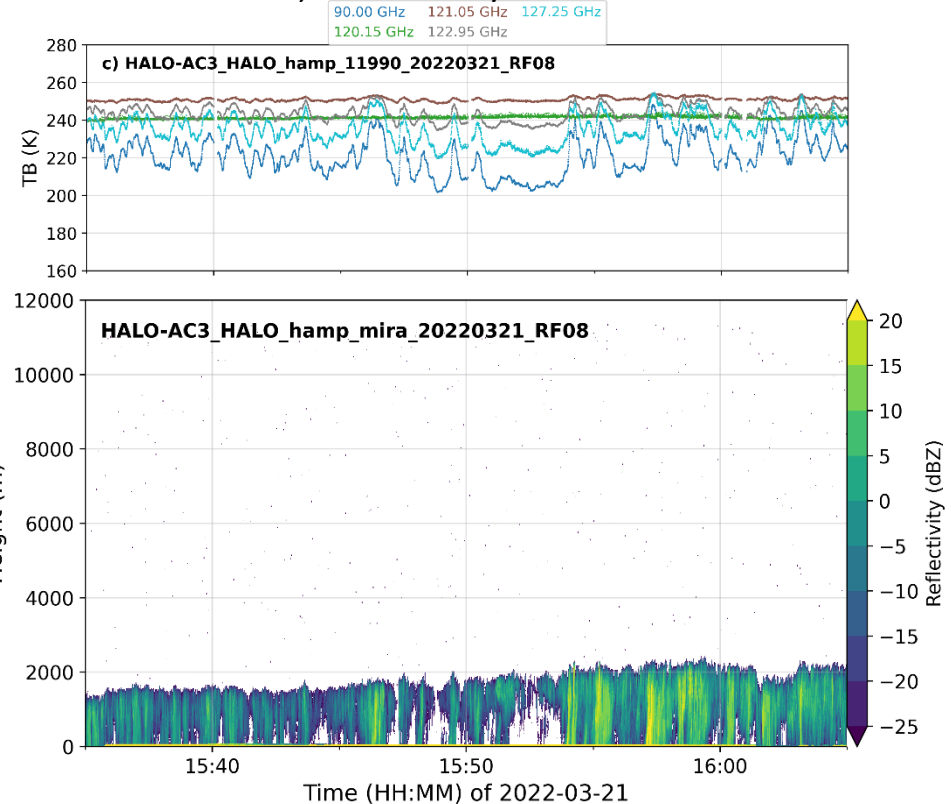
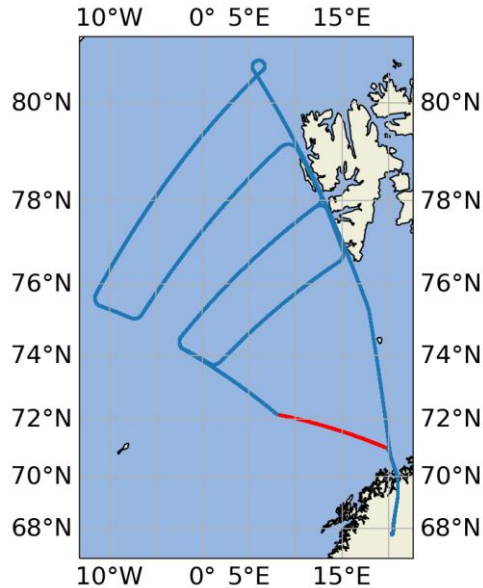
Crude LWP estimations

- LWP ~ TB amplitude (with LWP – no LWP) in many channels in the K, V and 119/90 bands
- 90 (31) GHz: 12 (6-8) K amplitude
→ LWP: 100-130 g m⁻²
some around 150 g m⁻²



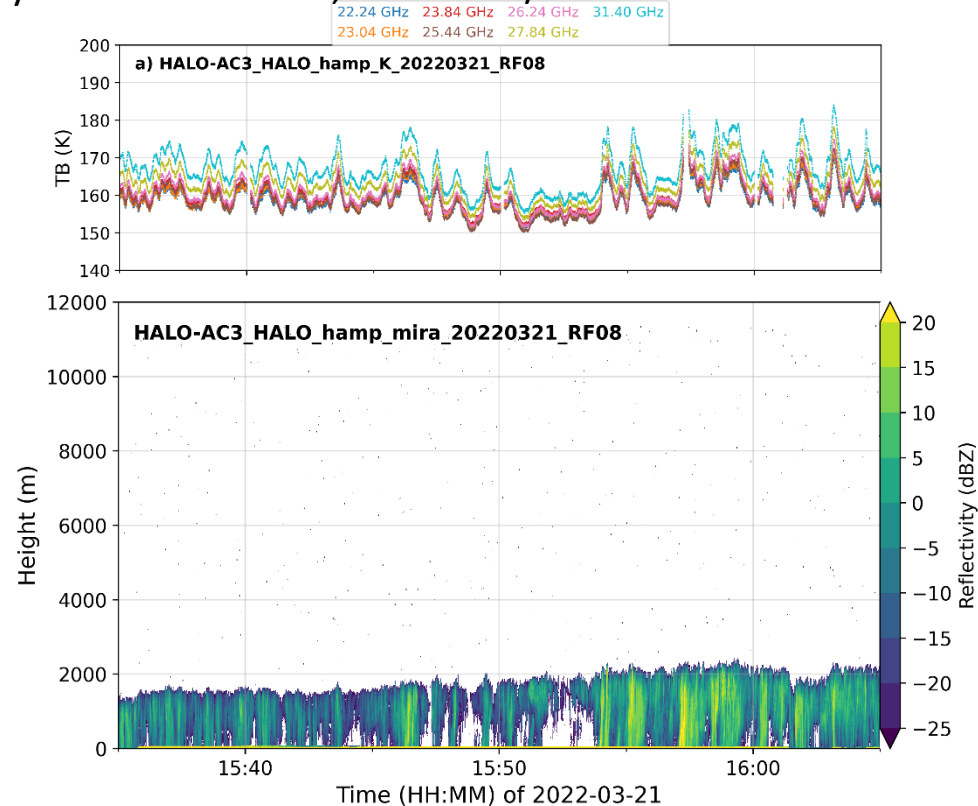
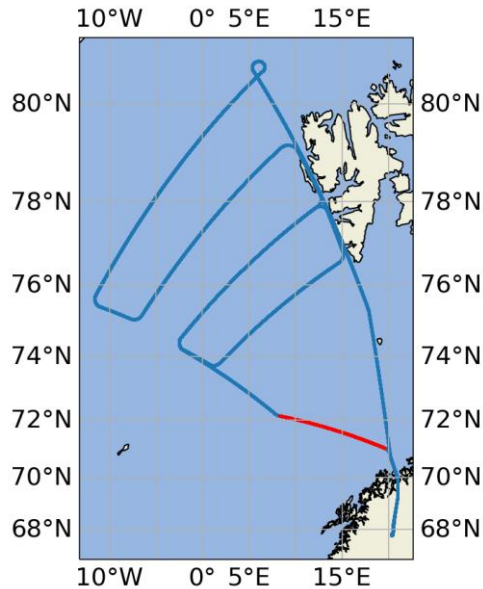
Crude LWP estimations

- LWP \sim TB amplitude (with LWP – no LWP) in many channels in the K, V and 119/90 bands
- 90 GHz: 15 – 30 K amplitude
→ LWP: 170 – 420 g m⁻²



Crude LWP estimations

- LWP \sim TB amplitude (with LWP – no LWP) in many channels in the K, V and 119/90 bands
- 31 GHz: 8 – 22 K amplitude
→ LWP: 170 – 400 g m⁻²



Crude LWP estimations

- AMSR CLW retrieval (but 5 h before HALO's arrival):
LWP: up to 350 g m^{-2}

