characteristics

ortable Atmospheric Radar

s:

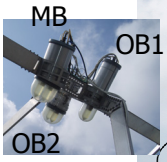
- ...th signal)
- ...=9.09 cm)
- ...rimetric

fications:

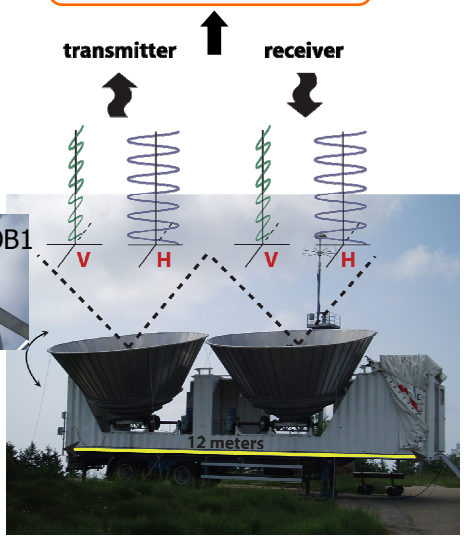
- ...

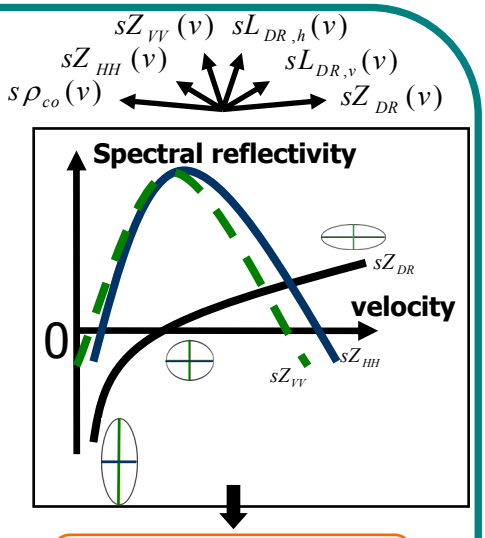
...OB2 ...tted

For wind measurements



Combination Doppler and polarimetric measurements





- signal processing
- atmospheric retrieval

Observa...

➢ ***specifications:***

- time res.: ≥ 3s
- ΔR: 10m – 30m (res. volume related to R)
- Doppler res.: 3 cm.s^{-1}
- max. velocity: 22.5 m.s^{-1} / 39.9 m.s^{-1}
- max. range: 15 km (~10...

➢ ***meteorological targets:***

- ice / mixed-phase cloud (... – Particle size > 100 µm
- precipitation: from drizzle...

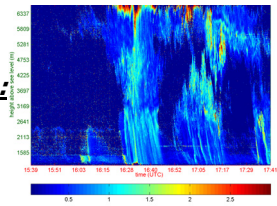
➔ TARA not sensitive to:

- Su... with...
- w...

r outputs

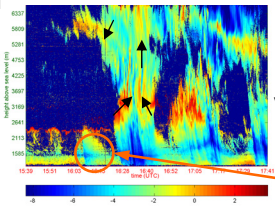
...dar parameters:

...s):



Mean Doppler width (m.s^{-1})

...tter

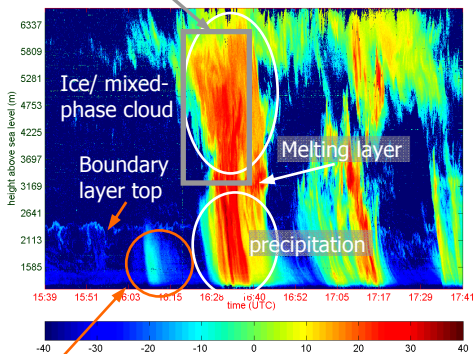


Radial mean velocity (m.s^{-1})

...ra

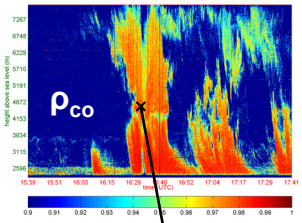
Drizzle

Microphysical retrieval box

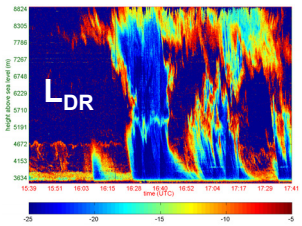


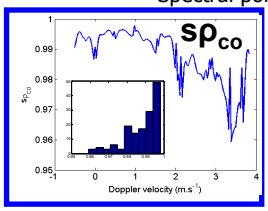
➢ Polarimetric parameters:

- polarimetric parameters related to the microphysical properties of the ice particles



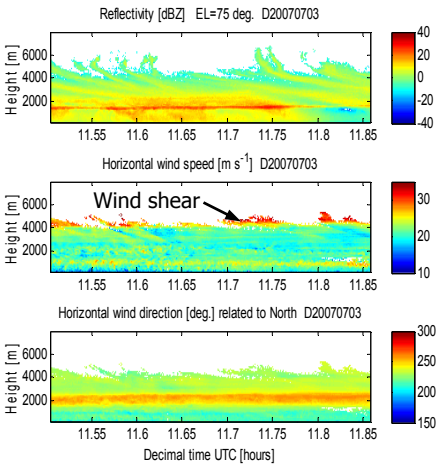
Spectral polarim...





Δ spectral parameters ... information than inte...

eval outputs



...on)

...er

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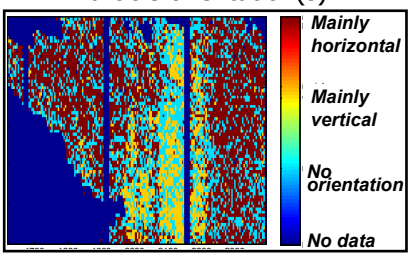
...t)

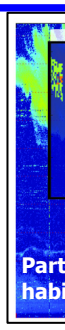
➢ Microphysical characteristics of ice clouds[1] (under development):

① Full bins characterization:

- products: ice crystal habit(s) and orientation(s).
- principle: based on the use of spectral polarimetric parameters
- constrains: high reflectivity (above 0 dB) required

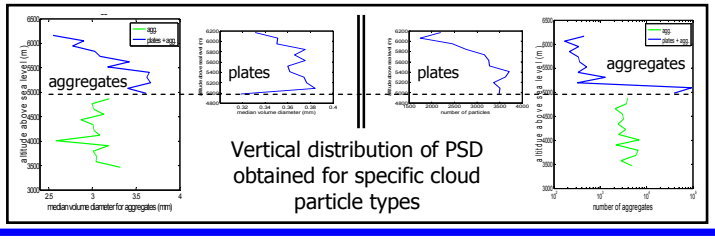
Particle orientation(s)





IWC

Nt

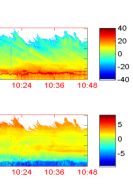


Vertical distribution of PSD obtained for specific cloud particle types

② PSD for spe... configuration...

- assumption: mod... particles spheroida...
- principle: fitting ... microphysical mod... polarimetric param...

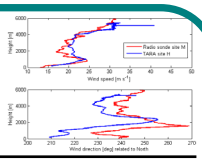
experience



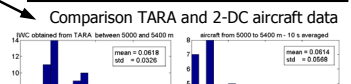
In summer 2007, TARA was part of the COPS campaign[3]

- retrieval evaluation with other sensors
- experience in data management (CERA data bank)

Comparison TARA and radiosonde launch



Comparison TARA and 2-DC aircraft data



HYMEX recommen...

➢ Sensor synergy: Full cloud system charact... retrieval improvement and assessment

➔ For ground-based sensors on-site: Raman and Doppler lidars, ... radars, microwave radiometers

➢ TARA requirements prior to the campaign...