

## Polar 5: radar

Radar reflectivity  $Z_e$

Attenuation corr.  
Remove cloud edges

Corrected  $Z_e$

### Collocated data set

- Max. temporal offset  
- **5 min**
- Max. spatial offset  
- **5 km**
- Moving average 30 s

Measured  $Z_e$

at Polar 6 flight altitude

## Polar 6: cloud probes

In situ PSDs

Combine probes,  
Separate ice/liquid

PSD<sub>ice</sub> and PSD<sub>liquid</sub>

Radar forward operator  
**PAMTRA**

- Liquid:
  - Mie scattering, spheres
- Ice:
  - SSRGA and mass-size parameter depending on M

$F(\text{PSD}, M)$

Find M  
such that  
=

Simulated  $Z_e$

at Polar 6 flight altitude