

Why does it rain?

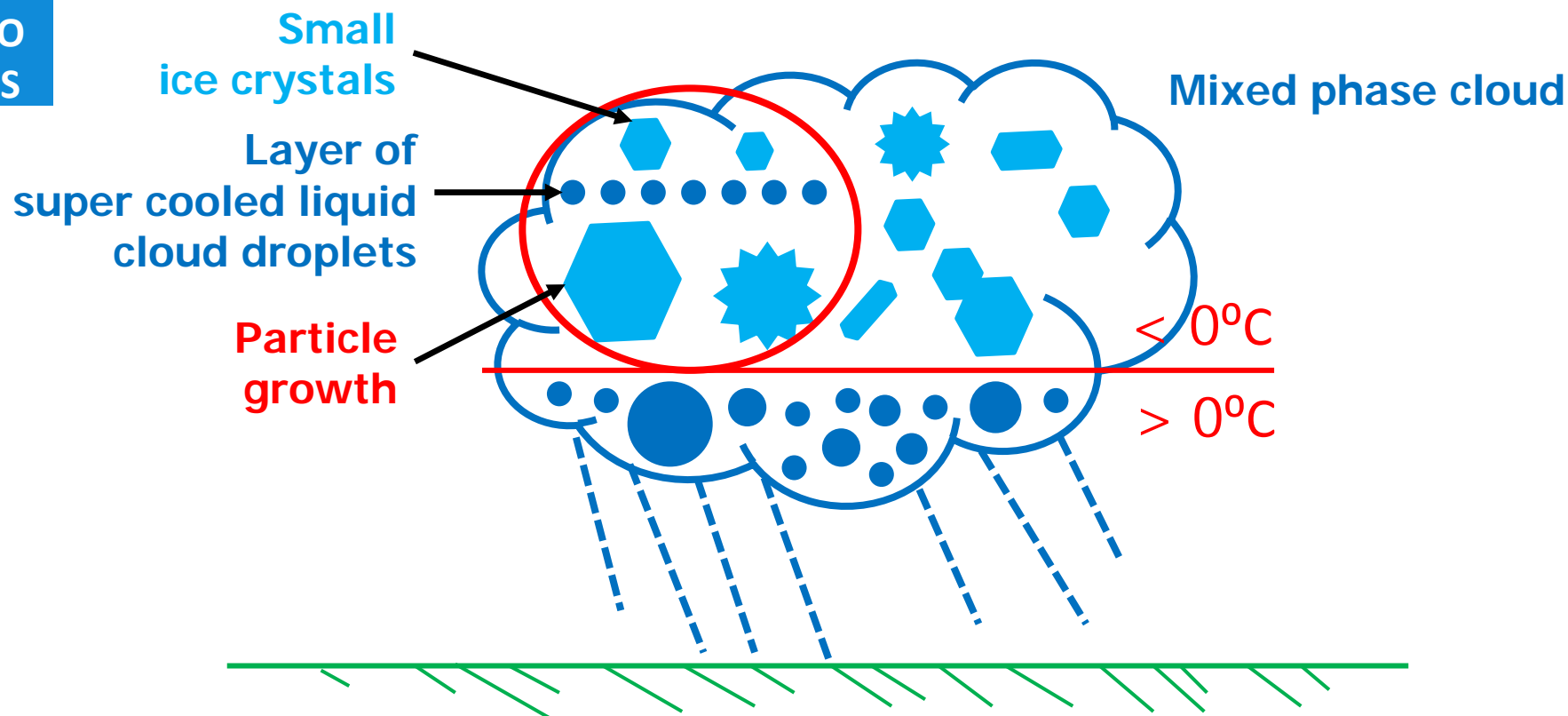
Ice particles growth within clouds

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Topic: Why does it rain? → ice particles growth



- Super-cooled liquid layer → much faster growth of ice crystals

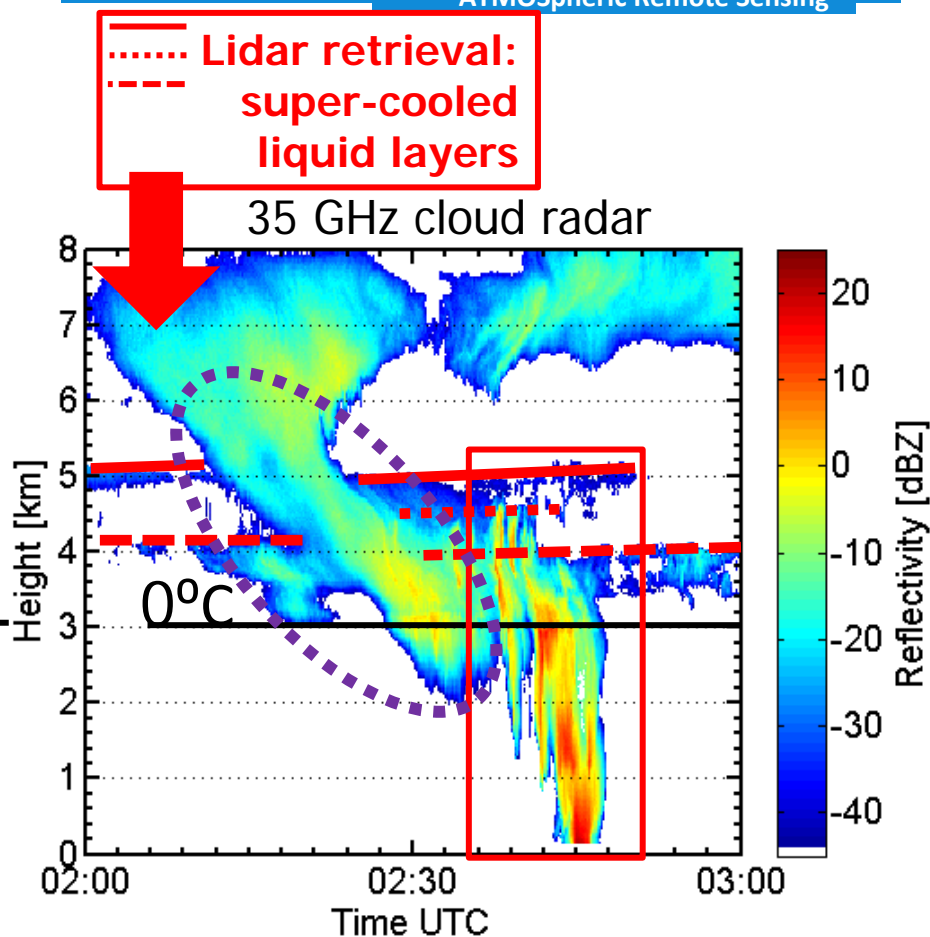
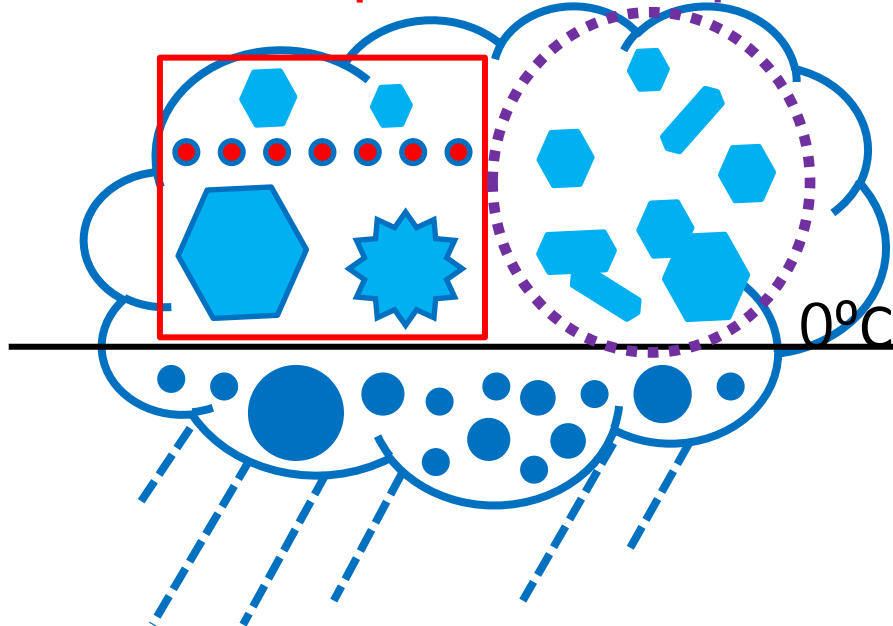
Goal: Understand the effect of super-cooled liquid droplets on falling ice crystals within cloud systems.

- Most important process for precipitation formation in mid latitudes

Observation of ice particles growth within mixed-phase clouds

Ice crystal growth with liquid

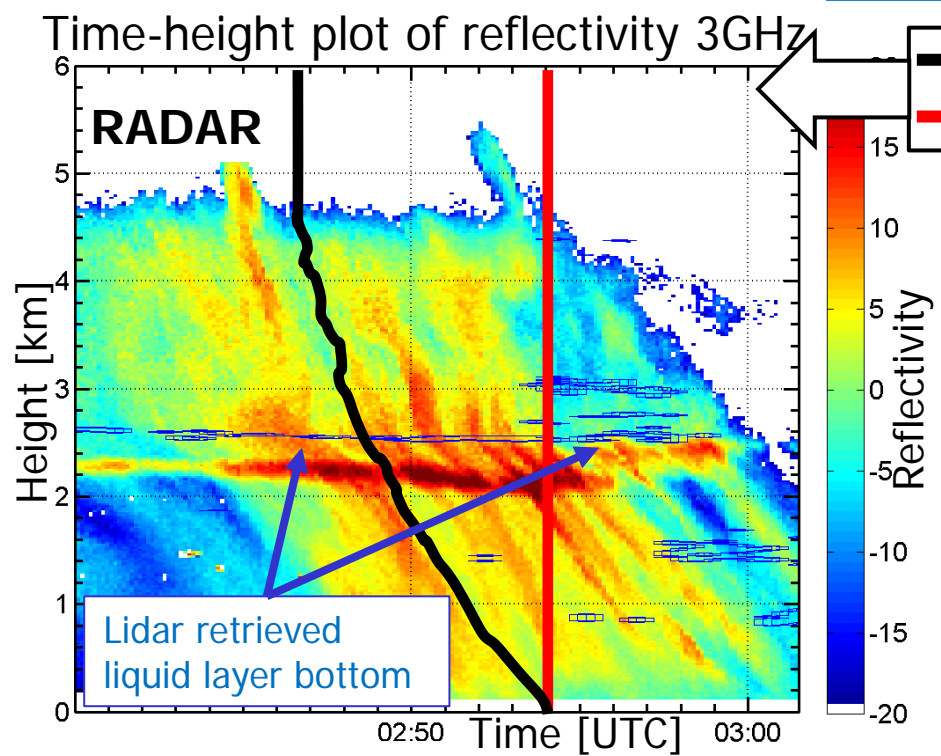
Ice crystal growth without liquid



➤ Observation of growth processes related to liquid layer presence

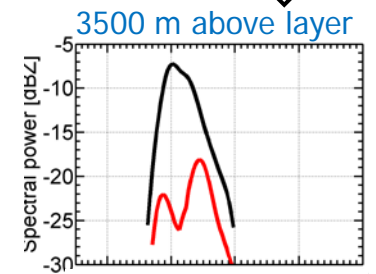
Follow a fall-streak to analyse cloud microphysics

Virga of a cloud

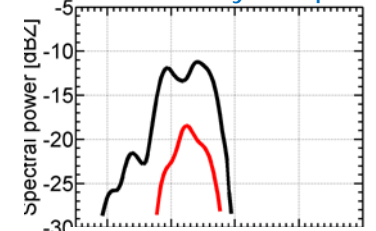


— retrieved fall-streak
— standard profile

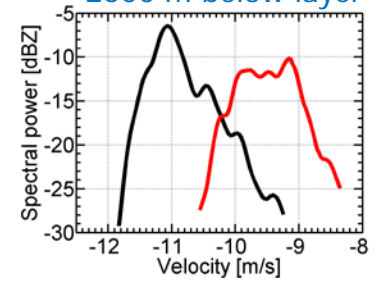
Doppler spectra



3500 m above layer



3150 m layer top



2500 m below layer

- Fall-streak: Tracking particle population from cloud top → bottom
- Changes of microphysical processes can be monitored correctly (Doppler spectra)
- **Better understanding of ice particle growth**



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Analysis of the Composition of Clouds with
Extended Polarization Techniques



Data for my work are sampled in cooperation with TROPOS, KNMI, and Metek during the ACCEPT campaign autumn 2014, CESAR observatory, the Netherlands.