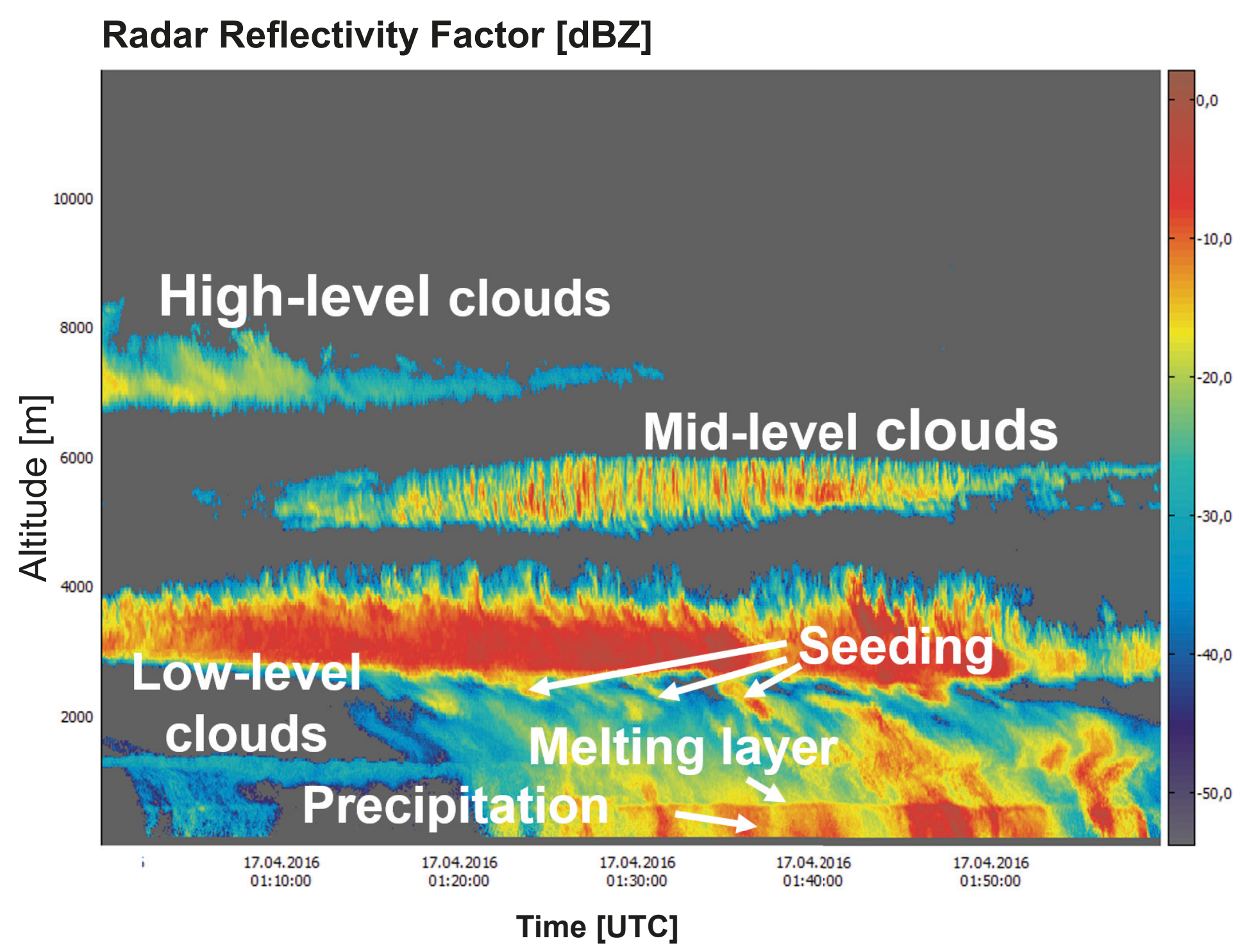


Cloud and Fog Profiling

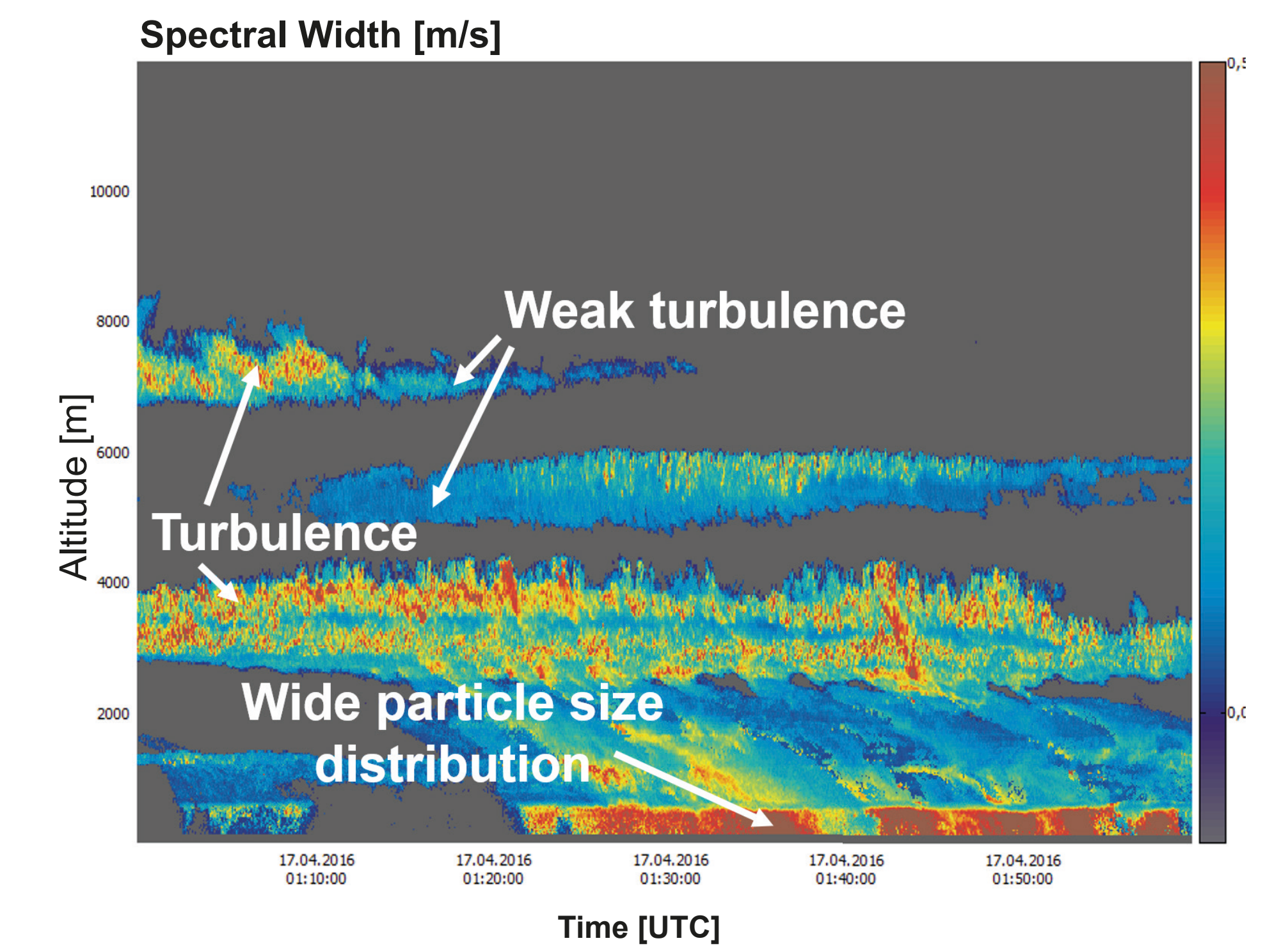
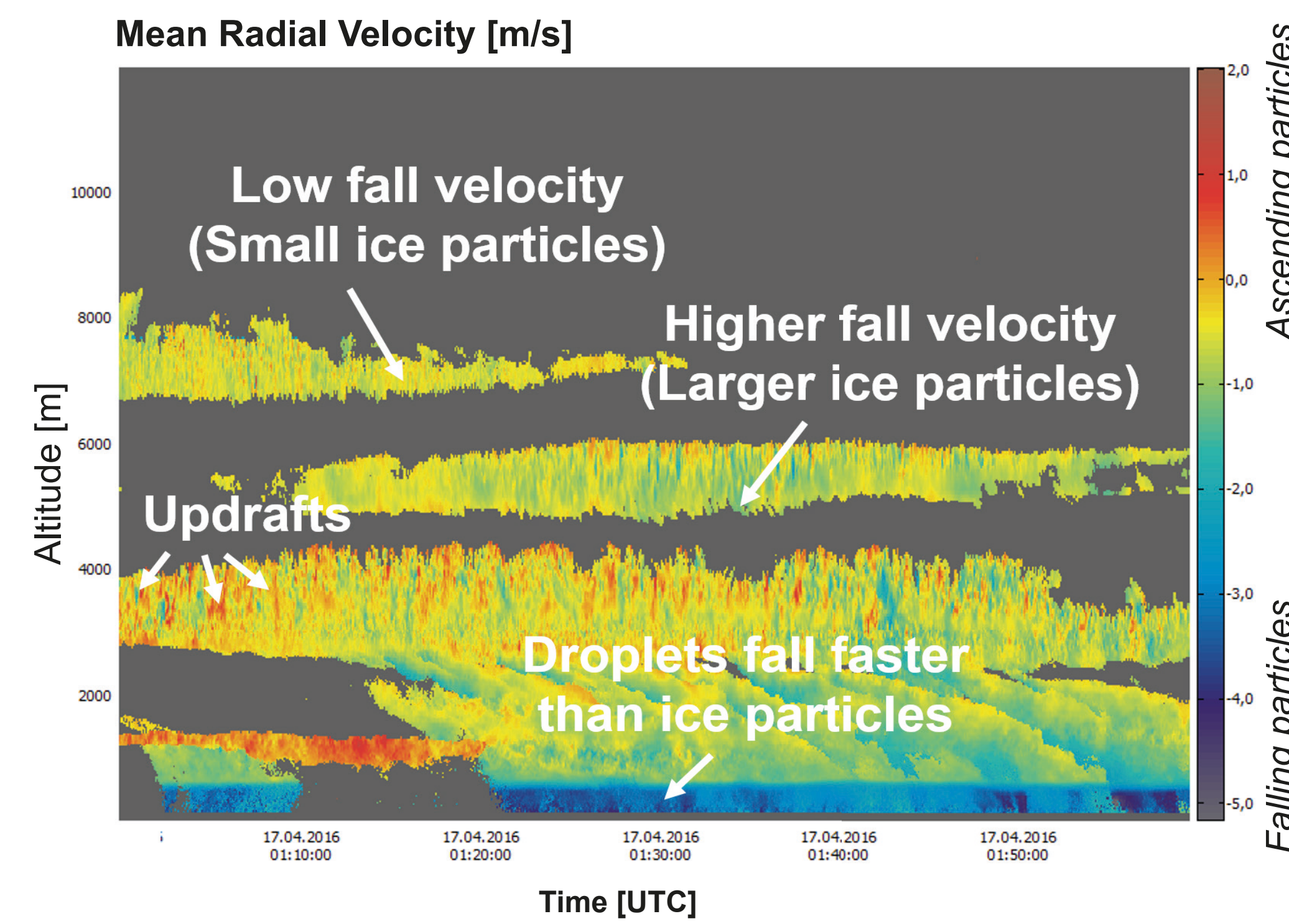
The cloud radar provides vertical profiles of the radar reflectivity factor with high temporal (~1 s) and spatial resolution (down to 1 m). These profiles contain information about cloud geometry, i.e. number of cloud layers present, cloud top altitude, thickness, and presence of precipitation.



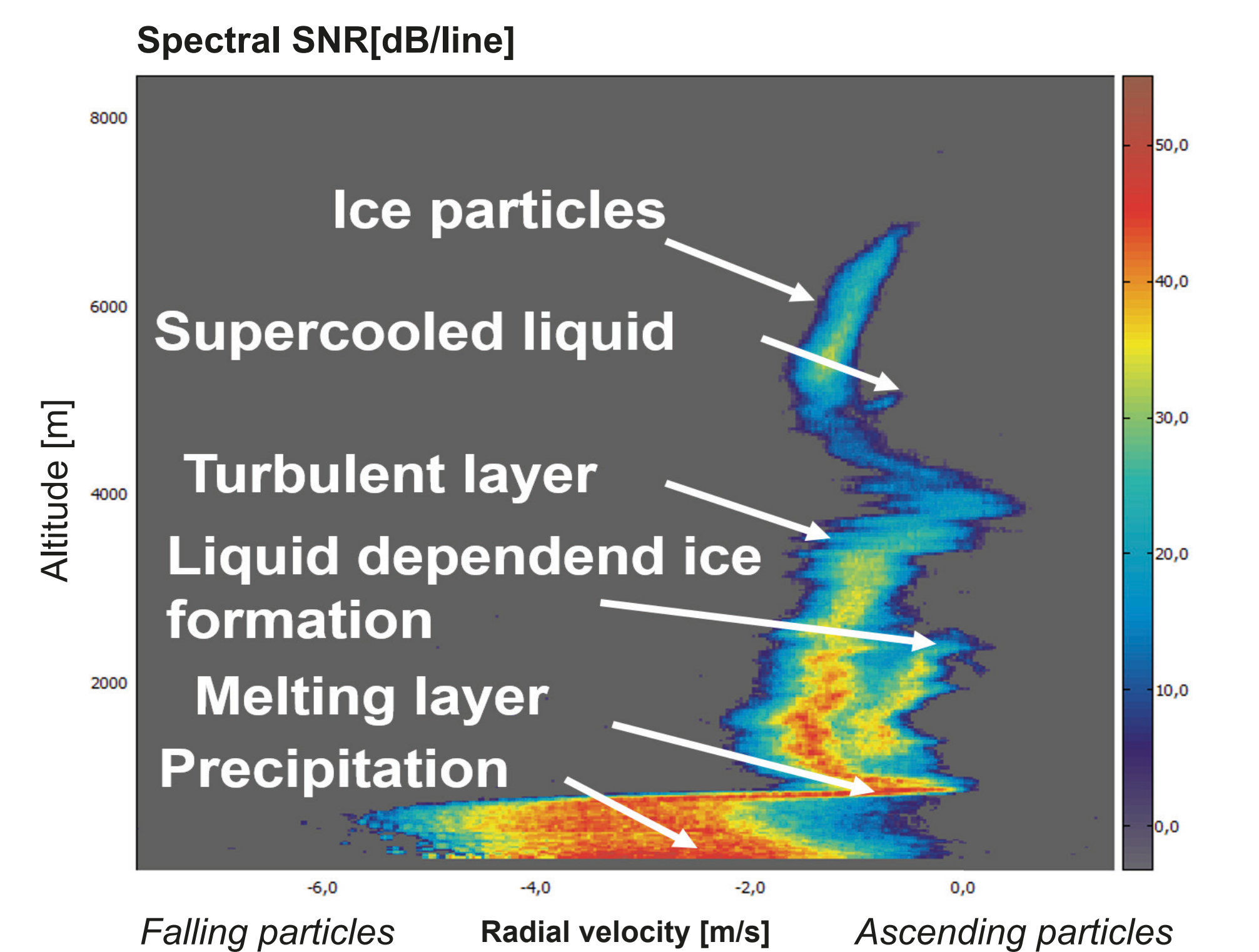
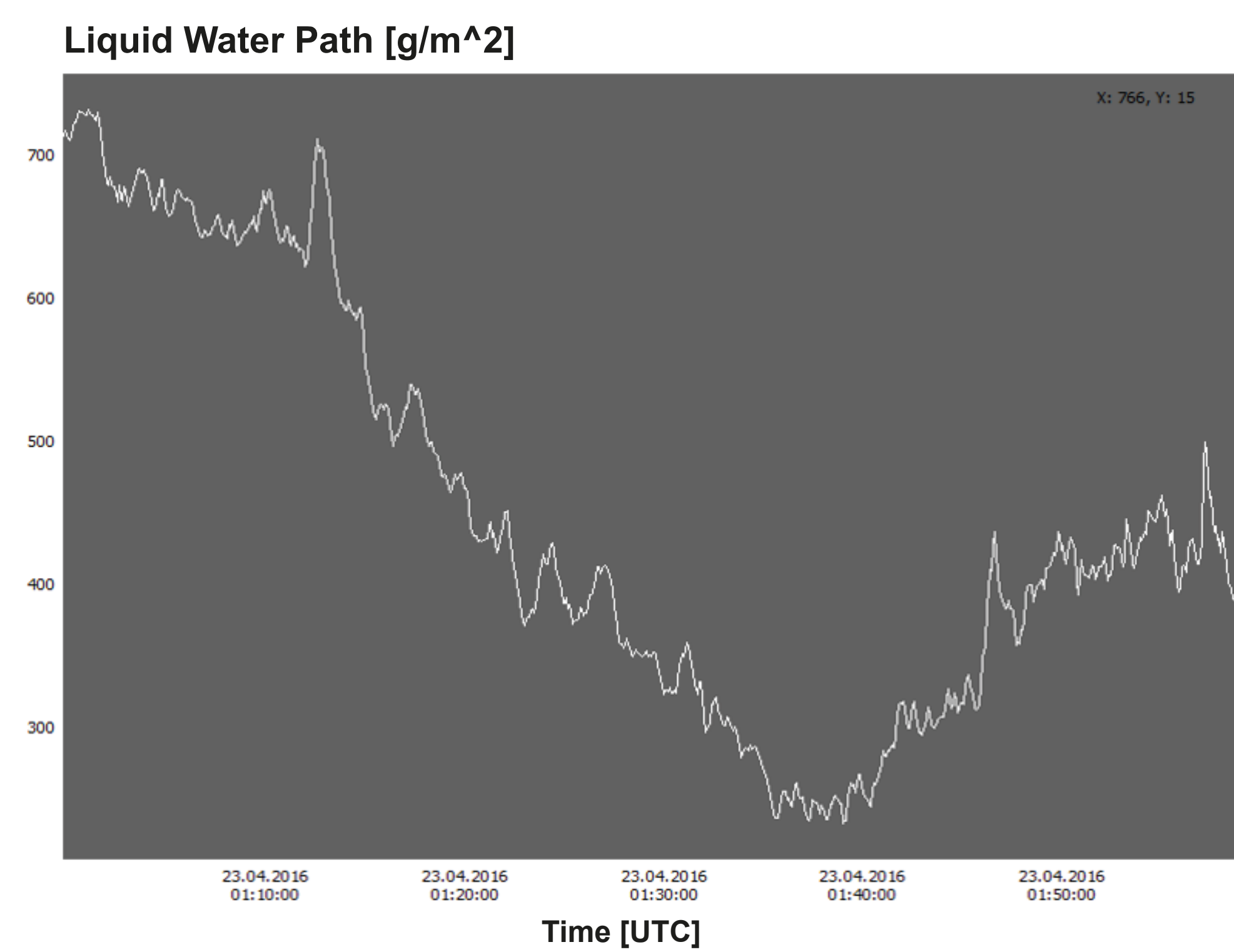
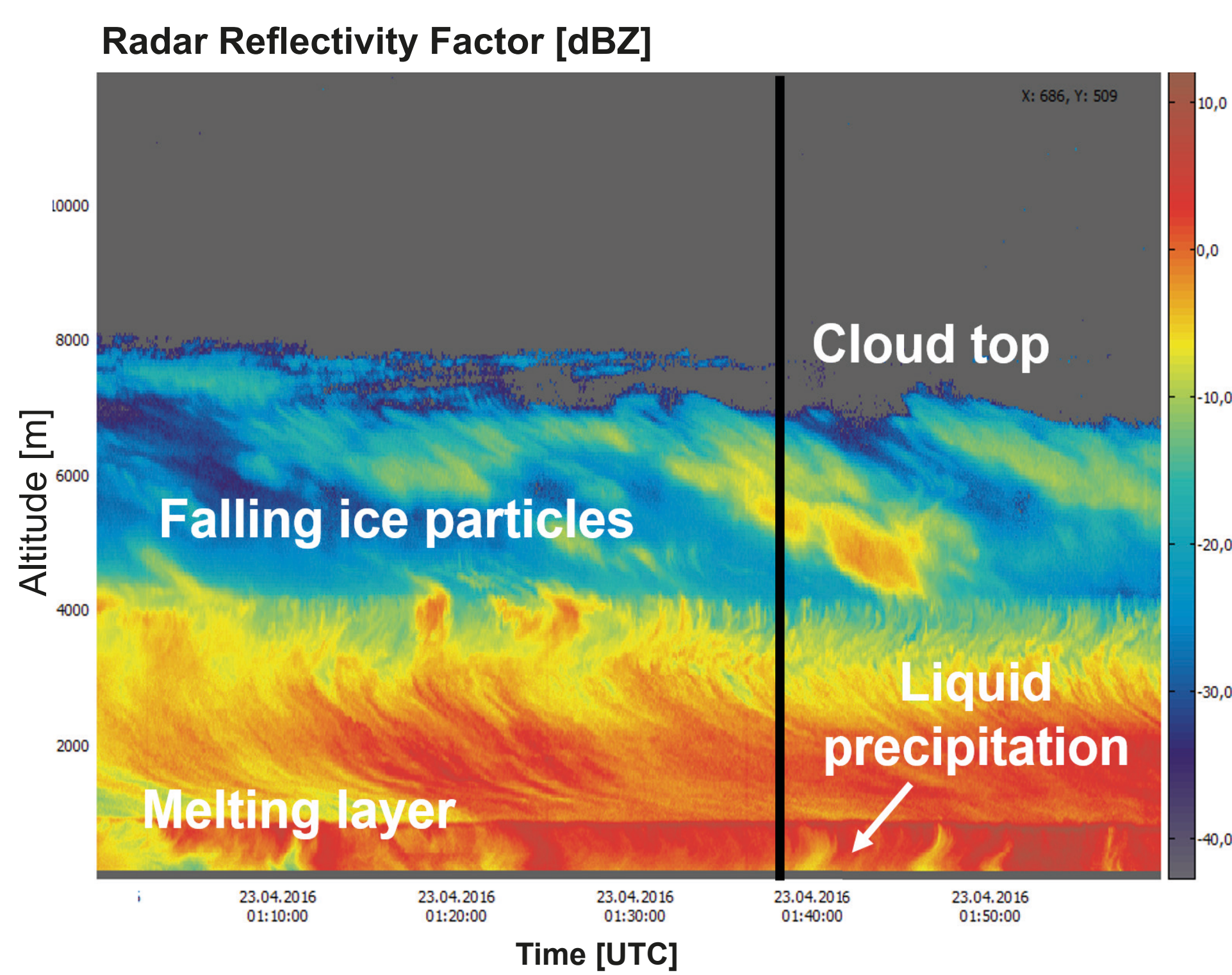
Air Motions and Microphysics

The operation frequency of 94 GHz allows for measurements of particle motions with high resolution (higher than 1.7 cm/s). Thus, continuous radar observations provide a base for detailed microphysical analysis and information about the cloud turbulence and the horizontal wind component.

Turbulent areas of the atmosphere are dangerous for regional airlines. As the radar has Doppler capabilities, it allows for a detection of turbulence and wind shears. Therefore, the cloud radar is a valuable source of additional warning information for civil aviation.



Characterization of Liquid Water and Particle Classification

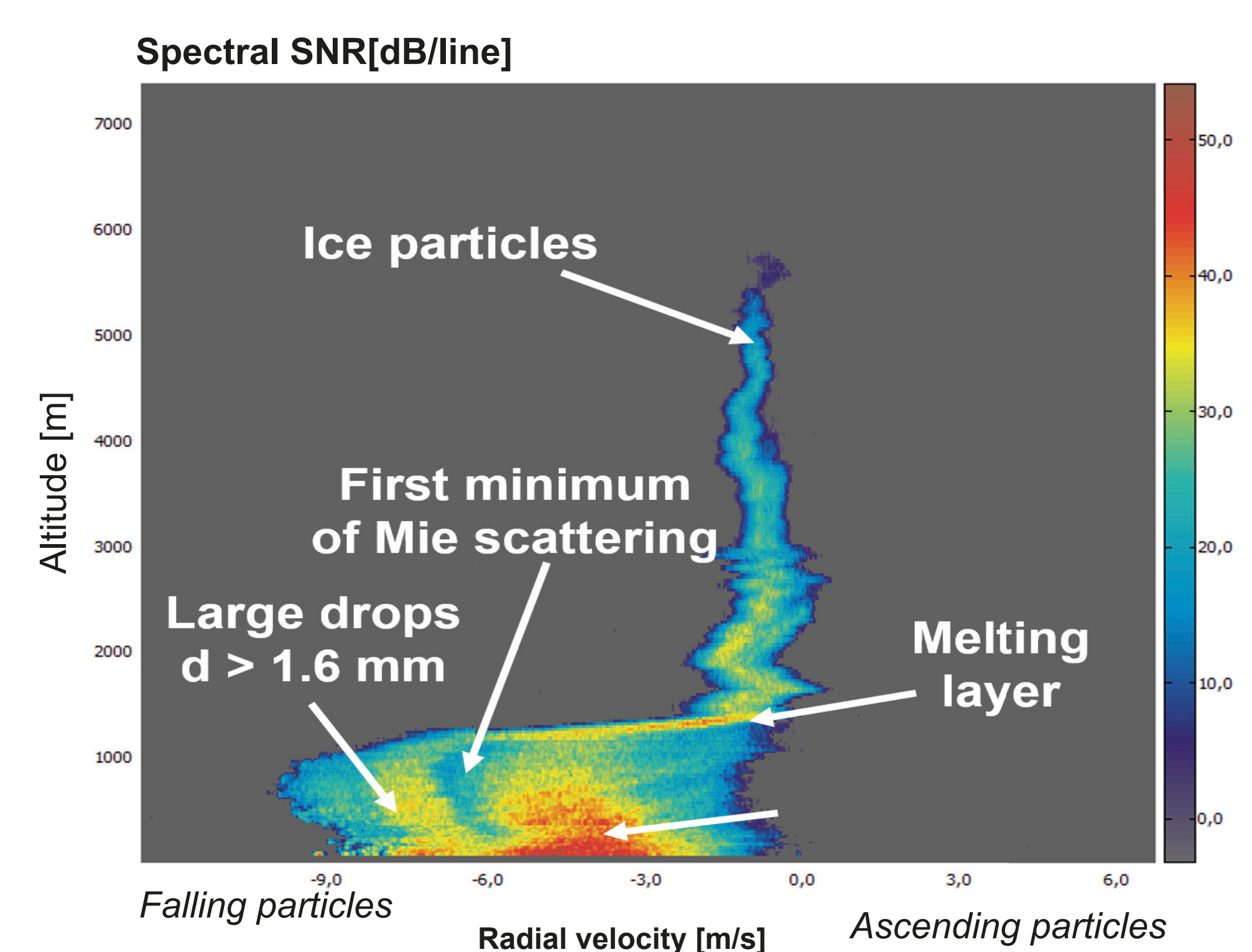
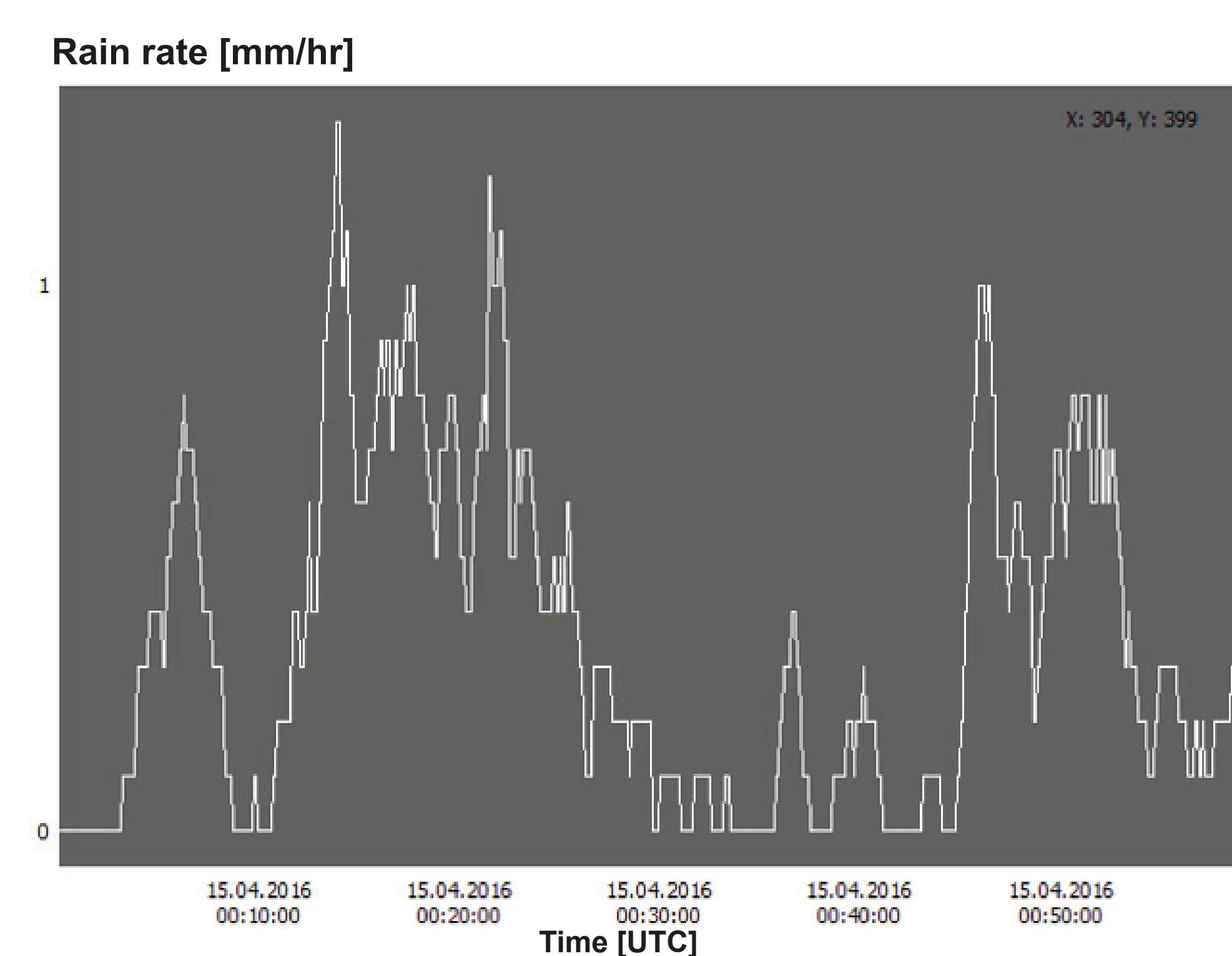
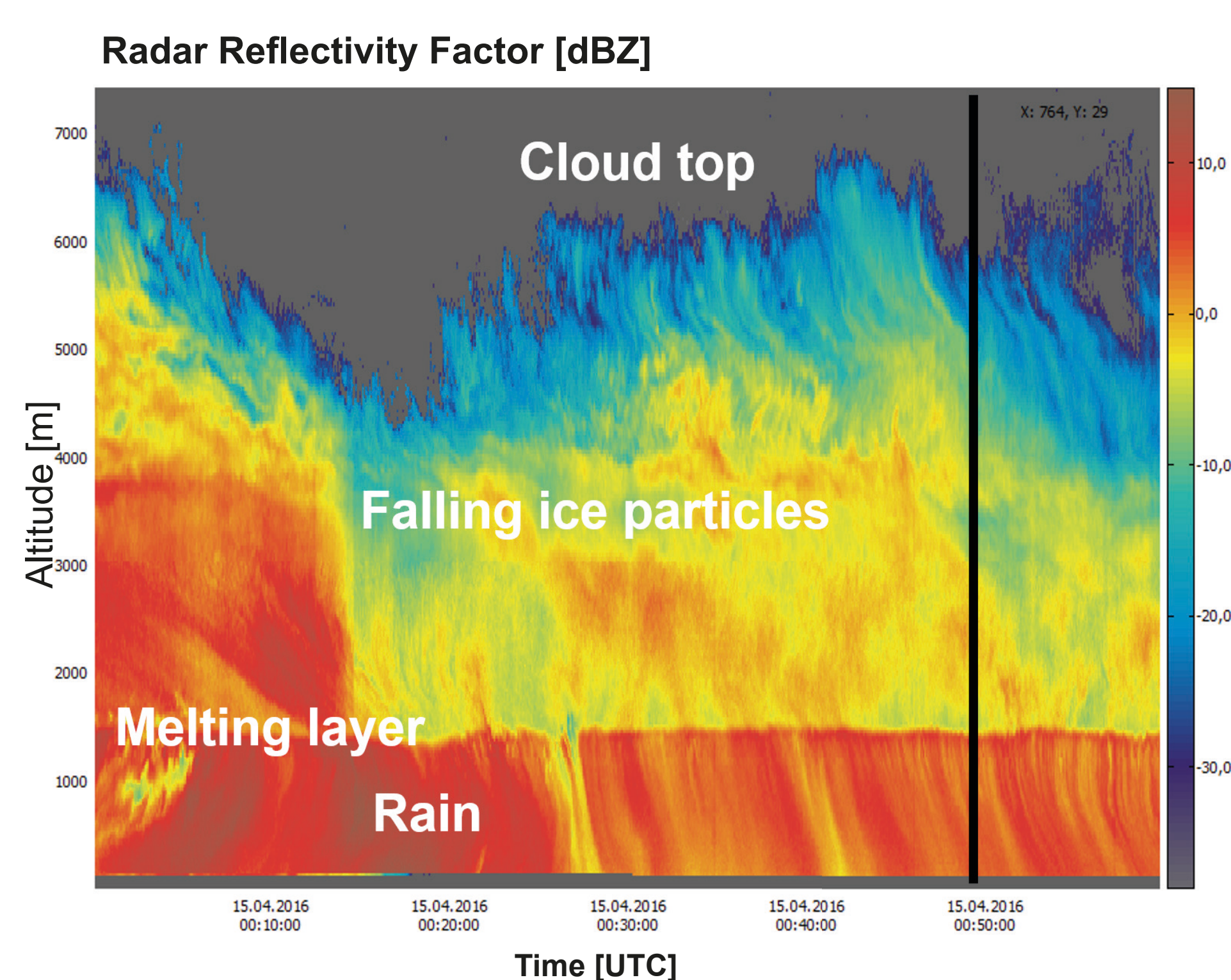


In the single polarization configuration the melting layer is used for a basic classification of scatter types. The dual polarization configurations allow for more reliable detection of the melting layer and detailed particle categorization.

An embedded 89 GHz passive channel allows for measurements of liquid water path (LWP). The passive channel utilizes the same receiving antenna as the active one and therefore has the same antenna beam width.

The radar provides high resolution Doppler spectra that allow for the detection of supercooled liquid particles. Supercooled liquid drops appear as a secondary peak, because these particles are small in size (~10 μm) and do not fall fast.

Precipitation Nowcast and Detailed Rain Microphysics



Having scanning capabilities and providing information on the wind direction and the particle's sedimentation velocity the radar can be used as a tool for short term forecasting of precipitation at ranges up to 15 km.

A built-in weather station monitors weather conditions at the ground, which is not only a source of additional information for analysis, but also a reference for radar based retrieval evaluation.

In the case when the size of liquid drops exceed 1 mm, resonance scattering effects occur. This provides a reference for size determination of raindrops even in light intensity precipitation.

Please refer to our extended brochure for technical specification and detailed list of applications.

