

Seminar über Microwave Physics and Atmospheric Physics

Referent/in: Dr. Martin Lainer, MeteoSwiss, Locarno

Titel: Analysis of strong X-band weather radar returns from wind turbines

Since 2012 MeteoSwiss is operating a mobile X-band Doppler polarimetric weather radar (METEOR 50DX) manufactured by LEONARDO Germany GmbH. In this contribution, we present the setup and results from a field campaign in the north-eastern part of Switzerland held in March 2019 with the aim to quantify the effects of wind turbines on the observed radar moments and derived products thereof. Further, a retrieval of the radar cross section (RCS) of such large objects has been attempted. The observed wind farm was located at roughly 8 km distance from the radar location and consists of 3 wind turbines (Total height: 199.5 m; Rotor diameter: 131 m; Hub height: 134 m; Nominal speed: 10.9 rpm). Rather than trying to find wind turbine echoes in usual weather scans, a special and dedicated scan strategy, consisting of PPI and RHI modes, has been set up for observing the wind farm in 24/7 operation. Thus it was possible to repeat very frequently the data sampling of the wind farm with the X-band radar. We provide statistical analyses of the reflectivity, RCS and various polarimetric datasets.

Zeit: Freitag, 15.11.2019, 10:15 Uhr

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