Graduate School Seminar

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SFB 652

19th May 2016, **15:15**

Heiner Asmus
Radarsondierungen und Höhenforschungsraketen

In situ measurements of small scale structures in dusty plasma in the MLT region

The mesosphere and lower thermosphere (MLT) region is a host of a vast of phenomena which are linked to the interaction of its neutral and charged components.
One of these are the so called polar mesospheric summer echoes (PMSE) which are strong radar returns from heights around 86 km that are observed in summer at polar latitudes.
The radar backscatter is solely determined by inhomogeneities in the refractive index of the atmosphere, which at these heights is dominated by free electrons.
In connection with charged icy aerosols these electrons can form structures at the half of the radar wavelength and hence fulfill the Bragg criteria. Notwithstanding great successes which have been achieved there are still open questions regarding e.g. backscatter theory and microphysics. To address these problems rocket-borne instruments are used to study the dusty plasma properties. We'll present new results of in situ measurements and discuss them in the context of small-scale structuring and related physical processes.

Talk: German
Slides: English

Location: Institute of Physics, Albert-Einstein-Str. 24, HS1

Talks in SS 2016

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