

PHYSIKALISCHES KOLLOQUIUM
EINLADUNG

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speaks

Dr. Hartwig Deneke

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about

“A geostationary satellite view on clouds, aerosols and radiation”

Clouds play an important role in the climate system. One particular aspect is their effect on the energy budget, through their interaction with solar and thermal radiation. The physical processes governing the formation and development of clouds remain poorly understood, however, and introduce significant uncertainties in weather forecasts as well as projections of anthropogenic climate change. Geostationary satellites offer the unique opportunity to observe the spatio-temporal evolution of clouds, and thereby provide important observational insights into cloud processes. In this talk, METEOSAT-based cloud properties will be used to study various aspects of the cloud lifecycle for different synoptic conditions, including shallow and deep convective clouds and frontal systems. Contrasting these analysis with ground-based observations, strengths and weaknesses of the satellite products will be illustrated. The influence of small-scale variability of clouds and the relatively coarse spatial resolution of satellites on such analyses will be discussed, including the resulting effects on the uncertainty of satellite products, and on the variability of radiative fluxes.

All interested persons are cordially invited.

Gez. Dr. Detlev Heinemann