

**Seminar on Physics and Chemistry
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Cloud Products for the Atmospheric Copernicus Sentinel Missions

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Abstract

The department "Atmospheric Processors" of the German Aerospace Center (DLR) is interested in the characterization and monitoring of trace gases as indicators for air quality as well as the determination of cloud properties.

For satellite-borne instruments operating in the UV/VIS/NIR spectral region, DLR is developing operational processors which are able to provide Level-2 Products in near-real-time, i.e. a couple hours after sensing. Adding to the present daily global coverage of low-earth-orbit instruments like GOME-2/MetOp or TROPOMI/Sentinel-5P the upcoming geostationary Sentinel-4 mission will provide unprecedented insights into diurnal variations of the several atmospheric species over Central Europe. To determine the air quality and trace gases accurately, a scene also has to be described well in terms of presence or absence of clouds and characteristics of basic cloud properties like cloud coverage and cloud height. On top of their relevance for the trace gas retrievals, knowledge about cloud conditions themselves is an important contribution in measuring and monitoring the Earth's radiation budget and the cloud impact on climatological applications.

In this presentation a main focus will be put on the cloud retrieval algorithms used by DLR and several application examples will be shown.