
Remote Sensing

Satellite data processing

Reception, Processing and Archiving of multispektral Satellite Images

Multispectral passive satellite images are the basis of the research activities of the satellite remote sensing workgroup. A specific focus lies on data from the Spinning Enhanced Visible and InfraRed Imager (SEVIRI) instrument flown on the geostationary satellite platform Meteosat Second Generation (MSG) and operated by EUMETSAT. To reliably obtain images in near-realtime, a satellite reception station has been setup at TROPOS in 2010. Data from the EUMETCast service are received by means of a satellite dish and a computer equipped with a DVB-S receiver, and subsequently decoded and archived on a storage server. A nearly complete archive of SEVIRI images starting with the beginning of operational service of METEOSAT 8 in January 2004 are available. Besides the primary geostationary service, the Rapid Scan Service (RSS) is also archived, which allows detailed analyses of the temporal development of the atmosphere due to its 5 minute repeat cycle. Current efforts focus on an increase in reliability by means of a second redundant receiver, as well as the transition of EUMETCast to the DVB-S2 protocol.

Besides the archive, the derivation of products is required for research purposes. Here, the algorithms of the Satellite Application Facility on Support to Nowcasting and Very Short Range Forecasting and the Cloud Physical Properties algorithm developed at KNMI for the Satellite Application Facility on Climate Monitoring are utilized, and provide a wealth of products on clouds and radiative fluxes. Their continuous evaluation, improvement and development is ensured within EUMETSAT's network of satellite application facilities. These products are extended based on research requirements by internally developed algorithms. One example is a high-resolution cloud mask based on SEVIRI's high-resolution visible channel, which offers a 3-fold higher spatial resolution compared to traditional products.



Further Information

- METEOSAT Second Generation
- Satellite Application Facility on support to Nowcasting and Very Short-Range Forecasting
- EumetCast Description

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