

Global Change Research at the DLR Earth Observation Center Using Copernicus Sentinel Data

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ABSTRACT:

With the European Copernicus Programme a new era of satellite data availability starts. The Copernicus sentinel satellites comprise C-band radar data, optical high to medium resolution multispectral optical data, medium resolution thermal data as well as data for atmospheric research free available to users. This data range and unprecedented amount of data ask for an adequate data infrastructure in order to fully exploit the data wealth.

The Earth Observation Center (EOC) at the German Aerospace Center (DLR) consisting of the German Remote Sensing Data Center (DFD) and the Remote Sensing Technology Institute (IMF), is one of the few institutions in Europe which deals with remote sensing data starting from acquisition to processing, archiving, value-adding and finally to the distribution of information products to users.

At the EOC the new sentinel data will support research regarding estimation of geo-risks and civil security, analysis of land surface and atmospheric processes for a better understanding of global change and for the support of land and water management.

The continuous acquisition of sentinel data will enable to monitor dynamic processes by analysing changes of land surface like vegetation cover, water bodies, and urban settlements but also snow or ice cover. The data are also used to derive atmospheric information like air quality and ozone content. Special attention is given to near-real-time data processing. By using DLRs data receiving facilities sentinel data can be processed immediately after their download to the ground station. This is of importance in case of catastrophic events for mapping of e.g. flooding, land slides or fire, and also for maritime security for fast mapping of ice, oil or ships.

With this talk an overview of the use of sentinel satellite data at EOC, especially Sentinel-1, Sentinel-2, Sentinel-3, and Sentinel 5P will be given.

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