

MONITORING NDVI WITH MSG SEVIRI

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ABSTRACT

The Spinning Enhanced Visible and Infrared Imager (SEVIRI) sensor onboard the geostationary satellite Meteosat Second Generation (MSG) provides observations in both visible and near-infrared spectral bands and therefore can be effectively used for monitoring vegetation cover properties. Multiple observations per day made from geostationary satellites increase the amount of available cloud clear scenes as compared to observations from polar orbiting satellites. This helps to reduce cloud-caused gaps in MSG-based vegetation cover products and to improve timely detection of changes in the vegetation state.

In the presentation we will discuss advantages and problems of using geostationary satellite data to derive and monitor the Normalized Difference Vegetation Index (NDVI). This includes compositing approaches, techniques to correct NDVI for effects caused by changing illumination geometry during the day and changing satellite viewing angle across the satellite observation domain. Examples of NDVI daily, weekly and monthly map products over Europe and Africa derived from MSG SEVIRI data for 2005-2008 will be presented. Time series of NDVI over locations with different vegetation cover types have been compared with NDVI retrievals from the Advanced Very High Resolution Radiometer (AVHRR) onboard polar-orbiting NOAA satellites. Although both products agree on the seasonal pattern of NDVI change, MSG retrievals exhibit much less short-term spurious variability in the derived NDVI as compared to AVHRR data.