



Assessing consistency among Land Surface Temperature and other land surface parameters disseminated by the LSA SAF

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Remote sensing presents countless advantages in analyzing phenomena at the Earth surface. The increasing availability of remote sensors allows high spatio-temporal resolution and global coverage, impossible to obtain by other means. With the growing length of remote sensing data records, the use of measurements based on space-borne sensors opens new perspectives to the analysis of the impacts of climate change from local to global scales.

The Satellite Application Facility (SAF) on Land Surface Analysis (LSA) is part of the SAF Network, from EUMETSAT (European organization for the Exploitation of Meteorological Satellites) distributed Applications Ground Segment. LSA SAF provides products that enable the analysis of land surface variables, including land surface temperature, albedo, evapotranspiration and vegetation state variables (e.g. fraction of vegetation cover, NDVI, leaf area index), amongst others. Land surface variables allow a comprehensive characterization of surface state, which can have strong impact on local climate conditions. Anthropogenic changes to land cover and its effects on local temperature, for instance, are one of the main topics addressed when discussing human impact on the climate.

Recently, the LSA-SAF has released a catalogue of Climate Data Records (CDR) for land surface variables, i.e. homogeneous records over a time-period spanning from 2004 to 2015 and covering Europe, Africa and part of South America. This study takes advantage of the CDRs provided by the LSA-SAF, namely land surface temperature and vegetation products, as listed above, with the goal of deriving their annual cycle parameters (ACP) over Europe. These ACP are then used to assess possible mechanisms for temperature change associated to variability in vegetation cover or state, while also providing a first approach to a consistency analysis among LSA SAF products.

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