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The LSA-SAF ET product: an operational service of sub-daily estimation of evapotranspiration in near-real time across Europe, Africa and Eastern South America

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The Satellite Application Facility on Analysis on Land Surface Analysis (LSA-SAF) has been set up by the European Organization of the Exploitation of Meteorological Satellite (EUMETSAT, see http://lsa-saf.eumetsat.int/). Its major goal is the development of products characterizing the condition of the Earth's continental surfaces on the basis of meteorological satellite observations.

The exchange of energy and water fluxes between the Earth's surface and the atmosphere is a major phenomenon driving a series of processes that impact human life. Noteworthy examples are: agriculture yields, local weather conditions, water availability, intensity and extent of droughts, the ability of ecosystems to provide services to society, etc. The relevance of these processes has motivated the exploitation of satellite observations from the Meteosat Second Generation (MSG) to develop algorithms for the estimation of evapotranspiration (ET) and both latent and sensible heat fluxes in an operational framework functioning in near-real time.

The LSA-SAF ET product comprises half-hourly and daily estimates across Europe, Africa and the east side of South America. The quality of the ET product has been assessed by contrasting the estimates to in-situ measurements in flux measurement stations scattered across diverse climatic regions and plant cover types. The validation exercises -conducted by the development team as well as by independent studies- have corroborated the good quality of the product.

This contribution is intended to share details of the main principles of the algorithm (with insight to latest developments), the forcing variables (including several products derived from the SEVIRI instrument on-board MSG) and the ways of accessing and using the data.