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Online pre-operational drought monitoring at the European scale

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Due to the increased need of consistent and timely information on droughts at the European scale, the Joint Research Centre of the European Commission (JRC) is performing the pre-operational production of drought indices using meteorological information and modelled hydrological parameters for the purpose of drought detection, monitoring and forecasting.

In order to depict meteorological droughts by means of a well accepted index, we calculate the Standardized Precipitation Index (SPI). SPI shows the general precipitation status according to the average in the predefined period. SPI is calculated on a 5 km grid covering the entire Europe with monthly updates for the 1, 3, 6 and 12 months averaging periods. The usage of several averaging periods allows to better determine the drought development and to evaluate the propagation of meteorological droughts into agricultural and hydrological ones.

In order to monitor the development of soil moisture and its possible deficit, we are exploiting the products derived by the runs of the LISFLOOD hydrological model. For the time being, the daily soil moisture simulations and the seven days forecast, as well as their normalized values, are produced on a daily basis. This information provides an instantaneous overview of the soil moisture situation in Europe.

All the products are published online with daily updates in an interactive mode, where the user can query information using standard map server tools, at the URL http://natural-hazards.jrc.it/activities_droughts.html . Soil moisture and its anomaly as well as SPI timeseries from the year 2000 till today are available interactively on

the regional level in Europe.

In the near future, additional products based on hydrological data and simulations as well as on remote sensing products will be considered. Furthermore, the monthly forecast of the soil moisture and SPI, based on ECMWF products, will be evaluated in order to satisfy the growing demand for drought forecasting information in Europe.