



-field data exploitation: drought and floods events analysis using the MEA platform

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Since the launch of the first artificial satellite with the scope of observing the Earth – Atmosphere system, the amount of data retrieved from space platform has grown continuously: nowadays Earth Observation data collected from space platforms provide Gigabyte of data per year, and cover all the geophysics fields. Nevertheless, most of the scientific and application communities (land, ocean, atmosphere, hydrology, vegetation and so on) have worked separately (or with just few contacts) for tenths of years, developing sensors, algorithms, data formats, and datasets (Petabytes of data) in an almost-independent way.

The need of jointly use data coming from the different communities and from different data sources (such as EO products and on-ground data) to allow multi-disciplinary studies has been recognized by the European Space Agency since 2008: the Multi-sensor Evolution Analysis (MEA) platform (<https://mea.eo.esa.int/>) has been developed with the scope of demonstrating the feasibility of an advanced tool for long term multi-field / multi-resolution / multi-temporal data management system, and has been used by the FP7 Project EarthServer to exploit long time series of EO and on-ground retrieved climate data.

MEA is now available for multi-temporal and multi-field data visualization and exploitation, containing tenths of Terabytes of data from the land and atmosphere domains (https://mea.eo.esa.int/data_availability.html) allowing users integrating the modeling approach with an intensive data exploitation approach.

In the present work, the usability of the MEA platform is described, and some use cases to demonstrate the combined use of atmospheric (precipitation), vegetation (NDVI) and soil (soil moisture) data are provided for drought and flooding events.