



## **Inter-comparison of multi-sensors RST-based soil wetness indices**

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Microwave remote sensing offers emerging capabilities to monitor hydrological processes at global scale. In particular, in the last years, its potential in soil moisture retrieval has been largely investigated and verified. Specifically dedicated space mission, like ESA-SMOS (European Space Agency – Soil Moisture and Salinity Mission) launched on last November, and the next NASA mission (SMAP – Soil Moisture Active & Passive) planned for 2012 both confirm the strong interest of the scientific community on this topic.

In the recent years, a multi-temporal data analysis (RST- Robust Satellite Techniques) has been applied to data acquired by different microwave sensors to monitor soil wetness variations. In particular, both data acquired by the Advanced Microwave Sounding Unit (AMSU) aboard NOAA (National Oceanic and Atmospheric Administration) satellites and by AMSR-E (Advanced Microwave Scanning Radiometer) on Aqua NASA's Earth Observing System (EOS) have been used to define different indices sensitive to the variation of soil wetness conditions.

Results achieved by individually using each of these satellite products have demonstrated the potential of such a methodology in monitoring soil wetness variations which, coupled with extreme rains or snowmelt forecast, could dramatically improve flood risk assessment.

In this work, results of an inter-comparison among such products in the case of several extreme flooding events occurred in different parts of the world are shown.