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A Web Mapping Service for 30 years of Satellite Derived Soil Moisture.

Richard de Jeu(1), Nils de Reus(1), John van de Vegte(2), Thomas Holmes(1) and Manfred Owe(3)

(1) VU Amsterdam, Faculty of Earth and Life Sciences, the Netherlands, (2) KNMI, the Netherlands, (3) NASA Goddard Space Flight Center, USA

Recently, a historical global soil moisture climatology as derived from passive microwave data has been developed. The data set spans the period from November 1978 through the beginning of 2008, making use of all available satellite sensors (Nimbus-7 SMMR, DMSP SSM/I, TRMM TMI, and AQUA AMSR-E). The various sensors have different technical specifications, including primary wavelength, incidence angle, horizontal resolution, and temporal frequency of coverage. This range of specifications is addressed by a single Land Parameter Retrieval Model. The new data set is a global product, and is consistent in its retrieval approach for the entire period of data record.

A web service infrastructure has been constructed to reach a large user community for this dataset. The development of this infrastructure is part of the Atmospheric Data Access for the Geospatial User Community (ADAGUC) project, which aims at reducing the need for users to invent their own converter and mapping tools. A web service has been developed to enhance the availability of the soil moisture data set. To facilitate users of many different GIS platforms in addition to the web interface, selection of data by geographic and temporal extent is possible through an open standards based mapserver, so that any OpenGIS compliant software will be able to retrieve the visualised data. Furthermore, by using Open Source conversion tools the selected soil moisture datasets will be available in a large variety of Open Standard GIS formats like netCDF, HDF4/5, GRID, KML and geoTIFF, which increases the accessibility of the dataset significantly.