



Comparison between surface soil moisture obtained by remote sensing, field experiments, and land surface modelling.

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Soil moisture is a key parameter in different environmental applications, such as hydrology. This parameter plays an important role between runoff and infiltration, which is the main driver behind most hydrological processes. Remote sensing techniques offer the possibility to know the spatial variability of soil moisture over large areas, and to use it as input parameter or as validation of distributed hydrological models.

In this contribution, we present the preliminary results of an inter-comparison, for a large time of period, between surface soil moisture derived from ERS-scatterometer, field data (TDR) and modelling simulations.

The studied area is the Grand Morin watershed, 1200km², located at 35 km east of Paris (France). The agriculture area covers 76% of the basin, whereas forests and urban areas represent 19% and 5% of the basin, respectively. Time Domain Reflectometry (TDR) continuous measurements exist in the studied site since November 1996.

Remote sensing soil moisture data is obtained from the European Remote Sensing satellite (ERS-scatterometer) from Vienna University of Technology (Wagner et al.,

2003), acquired since October 1997 with a spatial resolution of 50 km.

The hydrometeorological model is based on a soil-vegetation-atmosphere transfer (SVAT) scheme. The atmospheric forcing is provided by the SAFRAN analysis (Quintana-Segui et al., 2007), using a 8km grid. Moistures simulated by the model are compared to surface soil moisture derived from ERS-scat to validate its pertinence.

References:

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