



Soil Moisture from MetOp scatterometer data: First assimilation results from a numerical weather prediction experiment

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The European Centre for Medium-Range Weather Forecasts (ECMWF) prepares the assimilation of soil moisture data derived from advanced scatterometer (ASCAT) measurements. ASCAT is part of the MetOp satellite payload launched in November 2006 and will ensure the operational provision of soil moisture information until at least 2020. In a Newtonian Nudging experiment of ERS-1/2 scatterometer measurements, we observed a positive impact of the assimilation of scatterometer derived soil moisture on the soil moisture analysis of ECMWF's NWP model.

Here we will report on first results from the assimilation of MetOp advanced scatterometer data. We will present a transfer function which (i) minimises systematic differences between the model and observations and (ii) converts the relative soil moisture values obtained by the scatterometers into model equivalent volumetric soil moisture. Further we will show assimilation results using a Kalman Filter based analysis system which will be the operational assimilation scheme for soil moisture at the ECMWF in future.