



Metop ASCAT soil moisture product: Calibration of the vegetation correction parameters

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In this study we investigated the calibration of the vegetation correction parameters in the TU Wien soil moisture retrieval algorithm. Unlike conventional soil moisture retrieval techniques used for space-borne microwave instruments, the TU Wien soil moisture retrieval algorithm represents a change detection method. The algorithm accounts for heterogeneous land cover and for the effects of vegetation based on empirically derived model parameters. The optimal choice of these parameters can be supported by calibrating the model using external reference data sets. In the past, external data sets have not been used unless they are indispensable to correct or improve the model output (e.g. wet correction in desert environment). Three different study areas (South-East U.S., Central Europe and South-East Australia) were tested to see whether the vegetation correction parameters can be calibrated using in-situ soil moisture information or soil moisture from land surface models. The experiments show that an enhanced vegetation correction leads to a better quality of the Metop ASCAT soil moisture time series signal. Our study demonstrates the need to calibrate the vegetation parametrization in order to remove remaining vegetation effects in the Metop ASCAT soil moisture product.