



## **New methods for the evaluation of atmospheric models with satellite remote sensing observations applied to two cases from the BALTEX Bridge Campaigns**

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The evaluation of atmospheric models is an important task to assess the model's accuracy and possible limitations. Recent progress in the spatial and temporal resolution of satellite remote sensing observations opens a promising way to increase the reliability of such evaluation efforts. In this work a new methodology is presented and tested by applying it to 2D cloud cover and integrated water vapour (IWV) over clear-sky land surfaces as observed by MODIS onboard TERRA and the Lokal Model (LM) of Deutscher Wetterdienst. The comparison utilises two scenes of the BALTEX Bridge Campaigns - one of the cases of the WMO cloud modeling workshop in 2004. It is shown that the newly developed methodology is helpful for evaluation purposes and that average parameters like, e.g., the total cloud cover need to be complemented by a larger variety of parameters to get a sufficient impression of the representation of clouds in atmospheric models. In particular, spatial distributions of cloud cover and IWV need to be addressed. Single cloud features might help to avoid ambiguities, if conclusions are drawn from average characteristics alone. Preliminary results, based on these cases, show that the correspondence between LM and MODIS is reasonable for patchiness and size distributions of the clouds, although LM has a tendency to underestimate the occurrence of small clouds. A long-term evaluation is needed to confirm these results. The measures that we presented are of use for such an evaluation since they allow an unsupervised automated analysis.