



Verification of cloud cover forecasted with the WRF model using satellite and ceilometer measurements

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Clouds play a major role on weather and climate forecast. However, despite significant development in the dynamical and physical modeling of the atmospheric processes, the representation of clouds in models is uncertain. The uncertainty appears due to insufficient initial conditions, the errors in the parameterization of sub-grid scale processes, the number of processes and interactions involved in the formation and persistence of a cloud and the difficulty in obtaining accurate observations of clouds. Thus, the evaluation of cloud representation in the models is an important step towards the improvement of cloud parameterization in models. The ceilometer's ground based measurements (located at Magurele (44.35N; 26.03E) in Romania) and satellite data are used in order to assess the ability of the WRF (Weather Research and Forecast) model to predict the cloud cover (cloudiness). Sensitivity experiments using different PBL conditions, cloud microphysics and cumulus parameterizations have been carried out for a few months from 2009 year's seasons, with focus on differences between model and observation for the low-level, middle and high clouds. The results emphasized the both major influence of initial conditions and variability of cloudiness.