



Differences between one and two moment microphysics in a very short range precipitation forecast using assimilation of extrapolated radar reflectivity

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The COSMO NWP model is applied with a horizontal resolution of 2.8 km and radar reflectivity including the extrapolated radar data is assimilated making use of a water vapour correction method. The model (version 4.18) is used with one and two moment microphysics and it is applied to 10 days with heavy convective precipitation. The model forecasts with both microphysical schemes are evaluated and compared using various verification techniques like Fraction Skill Score (FSS) and SAL with the aim to identify differences caused by the schemes. The verification is focused mainly on the 1st and 2nd lead hours because forecasts for longer lead times are negatively influenced by boundary conditions. The results show that the structure of precipitation fields is different for one- and two-moments schemes. The one-moment scheme provides smoother precipitation fields with lower local maxima; however, in terms of FSS and SAL the forecast by both microphysical schemes are comparable.