



Impact of the horizontal resolution and the microphysical parameterization on the quantitative precipitation forecasting over Austria.

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The quality of the precipitation rainfall becomes more and more important for the human activities and civil protection. The increase of horizontal resolution in numerical weather prediction (NWP) models is a way to obtain a better spatial distribution of the precipitation forecast especially in mountainous terrain due to a better description of the orography. Nevertheless, the skill of a NWP model is not always improved by only increasing the horizontal resolution (Grubisic V. et al., 2005). The problem of the rainfall overestimation, on the windward part over mountain area, is connected to the complexity of the microphysical parameterization (autoconversion, collection, melting, ...) and the prognostic variables used to describe moist processes (cloud water, cloud ice, rainfall, snowfall ...).

The INCA analysis (Integrated Nowcasting through Comprehensive Analysis) developed by the Central Institute for Meteorology and Geodynamics in Vienna is used to verify the forecast precipitation. The precipitation analysis is a synthesis of station interpolation and radar data (T. Haiden et al., 2005). The quantitative precipitation forecasting (QPF) skill has been compared for several NWP model: ARPEGE (25Km) and ALADIN (10km) with and without a new microphysical scheme, ALADIN with an enhanced data assimilation system (3DVAR) and the new non-hydrostatic model AROME (2.5Km).

The results will be presented for August and October 2005 and the impact of the verification grid-box size will be discussed.