Development of a limited area NWP model based nowcasting version for Austria

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A nowcasting version of the limited area numerical weather prediction model AROME (Seity et al. 2011) has been developed at the Austrian national meteorological service ZAMG, recently. Compared to the existing operational AROME version this development includes a higher 3D-Var data assimilation frequency (hourly instead of three hourly), a shorter observation cutoff time (25min instead of 2.5h), a reduced leadtime of 12h to enable fast availability, a possible higher horizontal resolution (1.2km gridspace instead of 2.5km) and the usage of additional observations especially radar reflectivity and Doppler winds. Furthermore additional initialisation techniques such as FDDA nudging of 10m wind observations (Liu et al. 2005), latent heat nudging (Meier 2015) or cloud analysis following the approaches of Van der Veen 2013 and Brewster 2002 are tested.
First results indicate that the AROME nowcasting can beat the precipitation forecast of ZAMG's conventional nowcasting system INCA (Haiden et al. 2011)after two hours leadtime. In several cases latent heat nudging on top of 3D- Var radar assimilation helped to initiate convection in the model more accurately during the first hours. The most recent configuration of the AROME nowcasting system and its verification
will be presented.