



Towards seamless optimized wind forecasting

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For accurate power forecasts of wind turbines, precise predictions of wind speed and direction on high temporal and spatial resolution are inevitable. Usually, different forecasting approaches are employed for different lead times. In the nowcasting range (approx. up to 6 hours ahead), observation-based methods are often superior to pure numerical weather prediction outputs. In the short and medium range, wind forecasts of NWP models are usually combined with statistical downscaling approaches to take into account local, unresolved effects. The analysis and nowcasting system INCA, developed at the Austrian national weather service (ZAMG), provides, among others, deterministic analyses and forecasts of the 3D wind components on very high resolution in time (60 min) and space (1 km x 1 km) with special emphasis on the nowcasting range. Beyond the nowcasting range, regression-type downscaling methods provide site-specific enhanced NWP-based forecasts. The present paper proposes methods to blend the different approaches in an optimized way towards a seamless wind forecasting system.