EMS Annual Meeting Abstracts
Vol. 11, EMS2014-557, 2014
14th EMS / 10th ECAC

INCA Precipitation Analysis and Ensemble Nowcasting – Recent Developments and Operational Experiences

Benedikt Bica, Martin Suklitsch, and Alexander Kann

Central Institute for Meteorology and Geodynamics, Numerical Weather Prediction, Vienna, Austria
(benedikt.bica@zamg.ac.at)

The high-resolution analysis and nowcasting system INCA (Integrated Nowcasting through Comprehensive Analysis) provides - among other parameters – spatial fields of precipitation, precipitation types and convective parameters in high spatial (1 km) and temporal (5min, 15min, 1h) resolution.
INCA combines surface raingauge data, remote sensing data (radar, satellite), forecast fields of numerical weather prediction models, and high-resolution topographic data. The generated precipitation fields are mainly used as input for rainfall-runoff models and operational flood-forecasting.
Besides the "deterministic" version of the INCA algorithm, a new En-INCA version provides an ensemble of nowcasting runs by employing variable error-motion vectors for rainfall-displacement, convective developments, variable radar scaling and others.
Further developments focus on data quality control, as the real-time assessment of input data, both of rain gauge and radar information, plays a crucial role in the quality of the predicted fields.
The paper will give an overview of current research activities and operational experiences related to the INCA precipitation module.