

## 4th workshop on assimilating satellite cloud and precipitation observations for NWP



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Type: **Poster presentation**

### **Satellite and lightning assimilation within SINFONY, the seamless combination of Nowcasting and NWP ensembles for storm-scale convective forecasting**

At DWD the pilot project SINFONY has been set up in 2017 to develop a seamless ensemble prediction system for convective-scale forecasting with forecast ranges of 6 up to 12 hours, which integrates ensemble nowcasting techniques with ensemble numerical model prediction (NWP) in a more or less seamless way. The focus is on severe summertime convective events with associated hazards such as heavy precipitation, hail and wind gusts. Efforts are undertaken on the one hand by enhancements to both nowcasting and NWP separately and on the other hand by mutual information exchange and combination between these two methods.

For the NWP system, a rapid update cycle (RUC) based on the new ICON-LAM model is under development, with hourly ensemble forecasts on the km-scale with improved model physics (e.g., 2-moment cloud microphysics). To improve the initial conditions, additional high-resolution observational data including Meteosat SEVIRI satellite data (IR and VIS channels), 3D radar data (dBZ and radial wind) and lightning densities are added to the existing LETKF based assimilation system, as well as the assimilation of nowcast cell objects. We are currently at an early stage of experimenting with all these new observation types separately and simultaneously.

The poster will give an overview of the goal, the concept and the progress of the SINFONY project as a whole, and its status about data assimilation.

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