



Predicting uncertainty in the global ICON Ensemble

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Since October 2015 DWD runs an experimental ICON ensemble suite with 40 members and approx. 40km horizontal resolution on the global scale up to +180h twice a day (00/12UTC). It is planned to start the dissemination of operational forecasts in the second half of this year. The ensemble is initialized by analyses from our ensemble data assimilation system (EnVar), a Local Ensemble Transform Kalman Filter (LETKF) with an assimilation cycle length of 3 hours. At the time no stochastic physics has been implemented and the error growth properties of the ensemble are determined by the variations of the initial conditions only. The Spread/Skill relation expresses the ability of an ensemble system to predict forecast uncertainty, i.e. if the ensemble spread carries information on the distribution of the errors of the ensemble mean. We provide a detailed analysis of the Spread/Skill relation in the ICON Ensemble by examining the properties of the point clouds in the Spread/Skill scatter diagram. We apply well established and new diagnostics in the Spread/Error plane and compare the results from the ICON Ensemble with the ECMWF-EPS throughout the atmosphere for the short and medium range.