



## **Verification of ensemble forecasts including observation uncertainty**

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Traditionally, verification implies comparison of a (ensemble) forecast against the truth represented by observations. Usually observation errors are neglected arguing that they are small when compared to the forecast error.

In this study as part of the MesoVICT project it will be shown that observation errors have to be taken into account for verification purposes. Observation uncertainty is estimated from the quality control scheme included in VERA (Vienna Enhanced Resolution Analysis). From this an analysis ensemble is created which is compared to the forecast ensemble. For developing the method COSMO-LEPS results provided by MesoVICT are used. The time period covers the core case from 20-22 June 2007.

To find appropriate verification methods for the ensembles a basic knowledge about their distribution is essential. Therefore, several statistical tests have to be applied (e.g., Kolmogorov-Smirnov-Test, Finkelstein-Schafer Test, Chi-Square Test etc.). The results determines which comparison methods can be applied. If these ensembles could be handled like normal distributions some scores and parameters for the probability density function would be appropriate. If this is not the case the main focus will be on non-parametric statistics (e.g. Kernel density estimation, Boxplots etc.).

A simple "Eyeball"-verification with histograms pointed already out, that at least for the forecast ensemble some critical deviations from the normal distribution develop in time.

First quantitative results will be presented at the conference.