A new forecasting system – the role of the forecaster

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We want to use a strong combination of high resolution models, ensemble prediction systems and not at least - human forecasters. Improvement of one of these parts should benefit the others as well. Adaptability to changes in product demands and technical conditions is important.

We see two base requirements for a future forecasting system

1) End product generation from a digital database. A user can define tailor-made products and import them into other systems. Many institutes are today using or working on this kind of systems.

2) Manual override in severe weather. Severe weather warnings is a major priority. Occasionally, a severe weather situation is not well simulated in the models. The forecast is adjusted before it reaches the public, without disturbing product generation.

The three corner stones of forecast data

High resolution deterministic model: Highest possible resolution is important to resolve severe weather features in complex topography.

Ensemble prediction system: This is the foundation for probability forecasts.

Human forecaster: A skilled forecaster equipped with the right tools is a very valuable asset, especially on shorter time scales. He can very fast validate a model run, find sensitive areas, compare with other models, check observation coverage and rejected observations and determine if the run looks reliable and if there is a risk for severe weather development.

A tool where the forecaster can add comments and corrections to the digital database

can be designed so the forecaster gets direct benefits from model upgrades and developers get information about model weaknesses. With improving models the forecaster can change focus from correcting synoptic scales to adjust mesoscale features. The forecaster can go from mainly correcting to mainly commenting the model output.

We see significant changes of the forecaster role. Complementing the models instead of competing against them or just translating the model output. Much less manual product generation, more focus on satisfying actual user needs. Close cooperation with model developers. Altogether this demands skilled and well-educated forecasters that can handle varied and challenging tasks in an evolving environment.