Translating Ensemble Weather Forecasts into Probabilistic User-Relevant Information

Matthias Steiner, Robert Sharman, Thomas Hopson, Yubao Liu, and Michael Chapman

National Center for Atmospheric Research, Boulder, Colorado, USA (msteiner@ucar.edu)

Weather-related decisions increasingly rely on probabilistic information as a means of assessing the risk of one potential outcome over another. Ensemble forecasting presents one of the key approaches trying to grasp the uncertainty of weather forecasting. Moreover, in the future decision makers will rely on tools that fully integrate weather information into the decision making process. Through these decision support tools, weather information will be translated into impact information.

This presentation will highlight the translation of gridded ensemble weather forecasts into probabilistic user-relevant information. Examples will be discussed that relate to the management of air traffic, noise and pollution dispersion, missile trajectory prediction, water resources and flooding, wind energy production, and road maintenance. The primary take-home message from these examples will be that weather forecasts have to be tailored with a specific user perspective in mind rather than a "one fits all" approach, where a standard forecast product gets thrown over the fence and the user has to figure out what to do with it.