

Working Group Questions and Guidelines

Following are some suggested discussion items for the working group meetings. These are only suggestions. The working groups should feel free to discuss other items that they believe are important, or other questions that have arisen during the plenary sessions. Each working group will present the results of their discussions to the whole workshop on Thursday afternoon.

Working Group A User and Operational Aspects

1. What verification information would help to bring the final forecasts closer to meeting the end users' real needs?
2. What types of *verification* (as opposed to *forecast*) information do end-users need? Do we know?
3. What verification information is needed to truly lead to forecast improvements? What information do forecasters and forecast developers need?
4. What are the relative benefits of providing probabilistic forecasts versus other types of forecast improvements (e.g., increasing lead time)?
5. Should the results of each step in the forecasting/use process (e.g., initialization, model/algorithm results, adjustments to these, final forecasts, operational use) be verified to identify "weak links"?
6. What approaches should be used to address operational questions (e.g., does a forecast reduce flight delays?) and to understand the usefulness of the forecasts to operations?
7. What are appropriate approaches for relating the quality of forecasts to their value/usefulness? What are the limitations of some approaches that are currently being applied?
8. How should human-generated forecasts be compared to automated forecasts? What if the time and space scales are somewhat different?
9. What are the main verification-related issues in this area? What are some approaches to solving them?

Working Group B Advanced Diagnostic Methods

1. Should diagnostic approaches differ for human and automated forecasts? How can these two types of forecasts be compared appropriately?
2. How should new verification methods change when the scale of the forecasts changes? Can forecasts on different spatial scales be compared to each other? How?
3. What are appropriate approaches for incorporating observational uncertainty into verification methods?
4. What new verification approaches and directions hold the greatest promise for providing useful diagnostic information about gridded or area forecasts?

5. Can/should new diagnostic approaches be developed that address specific operational questions (e.g., flight path impacts; hydrologic forecasts)?
6. Are there ways to utilize advanced statistical models (e.g., spatial models) to improve verification approaches?
7. What methodological issues are involved in verifying mesoscale models/forecasts?
8. What are the main verification-related issues in this area? What are some approaches to solving them?

Working Group C Scaling and Observations

1. How can the error in the forecasts be separated from the error in the observations?
2. How can we evaluate forecasts that are produced over data sparse regions? What are the limitations in the evaluations that can be done?
3. What are the impacts of non-systematic observations (e.g., severe weather reports, PIREPs)? How can we best cope with these impacts?
4. What are appropriate approaches for coping with representativeness error? Should forecasts be matched to observations, or should observations be gridded to match the forecasts?
5. How should human-generated forecasts (e.g., areas) be scaled when evaluating the forecasts on grid?
6. Should observations be scaled to match the scale of the forecasts, or vice versa?
7. What observational issues are associated with verifying mesoscale models/forecasts?
8. What are the main verification-related issues in this area? What are some approaches to solving them?

Working Group D Ensemble Verification Methods

1. How do ensemble verification approaches differ from traditional approaches? Are there lessons from ensemble verification that could be applied in other areas?
2. What are appropriate approaches for measuring the adequacy of the spread in the ensemble forecasts? How can we evaluate whether the ensemble distribution appropriately represents the pdf of the random variable being forecast?
3. Should the independent components of the ensemble runs be verified as well as the resultant run? If so, should the verification approaches differ between two?
4. What are appropriate approaches for verifying predicted pdfs?
5. What are the main verification-related issues in this area? What are some approaches to solving them?