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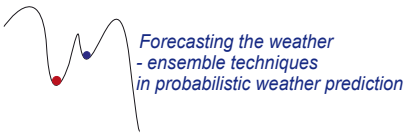

Quality assurance in the atmospheric-modeling process

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This is a review presentation that suggests a possible need for increasing the standards with which atmospheric models are applied. It is motivated by the fact that, during the last decade, it is arguable that there has been a trend toward applying these models with less-well-tested configurations, with insufficient verification, and with inadequate peer review of the process and the results. This trend can be attributed to 1) very easy access to turn-key community models, 2) the ease with which these models can be applied, 3) the growing fraction of model users that has not had the benefit of a course in numerical weather prediction (and even atmospheric science, in some cases), and 4) the fact that the societal need for qualified atmospheric modelers has grown faster than their availability. A particular issue is that many model users tend to lack an appreciation of the sensitivity of model solutions to the many seemingly arbitrary decisions that must be made when configuring a model for a particular application. This presentation will summarize the ways in which the modeling process and culture can be improved, for example through the more-thorough evaluation of the sensitivity of the solution to model configuration, the use of appropriate verification metrics, and the better education of model users about the fundamentals of numerical weather prediction and atmospheric predictability.