Geophysical Research Abstracts,
Vol. 10, EGU2008-A-10875, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-10875
EGU General Assembly 2008

Analysis of uncertainty in the distribution of wet precipitation events

J. Schaake

Consultant, Office of Hydrologic Development, NWS, NOAA

One challenge in hydrologic ensemble prediction is to process atmospheric model output to produce appropriate ensemble forcing at the space and time scales appropriate for the hydrologic model and application of the hydrologic model output. This involves re-scaling and down-scaling the atmospheric model output. It also requires attention to multi-scale aspects of atmospheric uncertainty in both space and time. An Ensemble Pre-Processing (EPP) procedure to do this is being integrated into an Experimental Ensemble Forecast System (XEFS) for use in NOAA/NWS River Forecast Centers in the U.S. Parameters of this EPP must be calibrated using historical data that define the climatology of both model output and observations and that define the conditional relationship between them.

This study looks at the relationship between the length of the historical archive of observations and atmospheric forecasts, the corresponding uncertainty in what is known about the marginal and joint climate distributions, and the implications of this for the uncertainty in the ensemble input forcing produced by the EPP. Results of analysis of long historical records precipitation forecasts and observations will be presented that offer insight into the complex sampling issues involved and into the need for re-forecasts (or hindcasts) from atmospheric ensemble forecast models. Some subtle issues regarding the possible effects of climate change on EPP results will be discussed.