Geophysical Research Abstracts, Vol. 7, 03760, 2005
SRef-ID: 1607-7962/gra/EGU05-A-03760

Automated validation precipitation data using GIS and spatial interpolation schemes

S. Del Greco (1), M. Urzen (1), and S. Ansari (2)

(1) NOAA National Climatic Data Center, North Carolina, USA, (2) STG Incorporated, North Carolina, USA (Stephen.A.Delgreco@noaa.gov / Fax: 828-271-4022)

A new spatial precipitation estimator developed at the NOAA National Climatic Data Center (NCDC) and recently implemented. The system uses rules-based GIS technology and multiple external data sources to estimate precipitation totals for any point in the continental United States. The estimated values provide an independent assessment for the quality assurance of daily and hourly in-situ precipitation data.

External data sources consist of, but are not limited to, National Weather Service (NWS) and Federal Aviation Administration surface weather observations, NOAA's Climate Reference network (CRN), National Center for Environmental Predication Rapid Update Cycle (RUC) model, Geostationary Operational Environmental Satellite (GOES), and Weather Surveillance Radar 1988 Doppler (WSR-88D). The precipitation estimator module known as "PrecipVal" replaces the current interactive graphical validation process that often requires manual review of suspect data. Higher confidence in PrecipVal is attributed to a change in methodology (using multiple external layers) and access to higher quality data for use as "ground truth."

Additionally, PrecipVal is able to estimate hourly or daily precipitation for all missing values whereas the current validation process can only generate estimated precipitation values under certain conditions. Evaluation of the new system using statistical analysis and manual verification of case studies and seeded data is ongoing. The results of the evaluation will be shown.