



The National Precipitation Verification Unit (NPVU): Operational Implementation

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- “Verification of direct NWP model, statistical, and forecaster value-added QPFs and PoPs is *necessary* to quantify and improve the skill of QPF/PQPF and PoP forecasts, and to assess the value-added to these forecasts at each step of the NWS [End-to-End] Forecast Process.” - Office of Meteorology (1999)
- “One of the most important components of an effective national QPF program is a comprehensive objective comparative verification system” - National Weather Service (1999)

Operational Implementation:

01 October 2000

Established & Administered by the
NWS Office of Climate, Water, and Weather Services

Located at & Co-managed by the
NCEP Hydrometeorological Prediction Center

NPVU Purpose:

to provide
timely & informative
QPF verification scores
to HPC, RFC, & WFO forecasters,
EMC & TDL modelers,
and NWS management

QPF Verification:

Verification statistics computed from QPFs for possible combinations of the following *as appropriate* (as a unit and by individual forecaster):

Primary Methodology - gridded, with a spatial resolution of ~32 km (Points and MAPs supplemental)

Forecast Increments: 6-, 24-, & 72-hr, etc.

Forecast Projections: 1st 6-hr period, Day1, etc.

Spatial Domains: nation, region, RFC, state, HSA, etc.

Temporal Domains: forecast period, forecast cycle, event, week, month, season, year, etc.

QPF Verification (cont.):

- Performance Measures:

 - Interval & Threshold Distributions

 - Error Statistics -

 - Mean Error

 - Mean Absolute Error

 - Root-Mean-Squared Error

 - Threshold Statistics -

 - Threat Score

 - Bias Score

 - Probability of Detection

 - False Alarm Rate

 - Equitable Threat Score