

The calibrated SREF-based probabilistic road-snow accumulation is based on a frequency correction applied to SREF-based joint predictors. The predictors are:

- the probability of snow, ice, OR freezing rain;
  - NCEP precipitation-type algorithm
  - Cyzs precipitation-type algorithm applied to post-processed 212 grids
  
- the probability that derived parameters sensitive to the ground temperature support snow accumulation
  - A simple parameter that's a function of the net radiative flux such that values > 1 are indicative of a “cold” surface
  - A parameter that uses the model's predicted surface fluxes to estimate if 3” of snow would melt over a 3h period. If no, then it's conditionally assumed that snow will accumulate

An uncorrected probabilistic forecast is made for each of the predictors listed above. Calibration is performed using a joint frequency correction technique similar to the method applied in the SREF-based SPC calibrated thunderstorm guidance. See Bright et al. (2006) [<http://ams.confex.com/ams/pdfpapers/84173.pdf>] for information on the joint frequency-correction technique.

The Madis road sensor reports from October, 2004 through April, 2005 were used as truth, and SREF-reruns over the same period were performed to calibrate the system. When a new SREF forecast becomes available, the predictors are calculated for each 3h forecast period and adjusted based on their performance over the 2004-2005 winter. The value assigned to each grid point is the maximum corrected value from the combination of the two predictors (i.e., there are multiple combinations from the two precipitation type algorithms and two derived parameters; all combinations are examined with the highest corrected value assigned to the grid point).