Road Weather Forecast System

Report for Fiscal Year 2001
Data Used in RWFS

- Model data
  - Avn
  - Eta
- MOS
  - NGM
  - MRF
  - AVN
- Observational Data
  - Metars
  - Mesowest (LDADs provided by FSL)
- Climatology
MDSS Forecast Sites

STATION & HIGHWAY LOCATIONS

INTERTS  ITS  RAW  RES  CLERK  NDOT  AIRQ
SNOWNET  DUGRAY  TOOLE  UDOT  FDOT  ANL
# Output Forecast Variables

## Core & Derived
- Max, min temp
- Temp, dewpoint
- Pop24, pop06, pop03
- Qpf03, qpf06
- Cond. prob. rain, snow, ice
- Wind u, v components, wind speed, direction
- Cloud cover
- Prob. Thunder, fog
- Visibility
- Rh
- Precip rate

## Non-Verifiable
- Low, middle, high cloud amounts
- Cloud base temp
- Sub-surface temp
- 3hr accum. snow depth
- Instantaneous snow depth
- Surface pressure
Forecast Modules

- Model forecasts- Avn00, Avn12, Eta00, Eta12
- MOS forecasts- Ngm00, Ngm12, MRF, AVN
- Climatology forecast
- Persistence forecast
Forecast Integration

- Discovers “best” combination of forecast modules for each forecast time and location.
- Integrated forecasts are weighted sums of the model inputs:

\[ F = \frac{\sum w_i f_i}{\sum w_i} \]

- Module weights for each site and forecast time are adjusted daily depending upon the performance of the module.
Data Plots for Akron, CO
Sample- Akron, Colorado Temperature, 18Z

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Avn 00</td>
<td>3.047</td>
</tr>
<tr>
<td>Avn 12</td>
<td>9.433</td>
</tr>
<tr>
<td>Eta 00</td>
<td>-0.447</td>
</tr>
<tr>
<td>Eta 12</td>
<td>7.418</td>
</tr>
<tr>
<td>Avn MOS</td>
<td>5.646</td>
</tr>
<tr>
<td>Ngm MOS 00</td>
<td>1.111</td>
</tr>
<tr>
<td>Ngm MOS 12</td>
<td>6.33</td>
</tr>
<tr>
<td>Persistence</td>
<td>8.9</td>
</tr>
<tr>
<td>Mrf MOS</td>
<td>Mssg</td>
</tr>
<tr>
<td>Climo</td>
<td>Mssg</td>
</tr>
</tbody>
</table>

Int fcst 0.336