SPoRT ADAS: A Meso-Surface Analysis

Science Sharing Session for NWS
May 2008

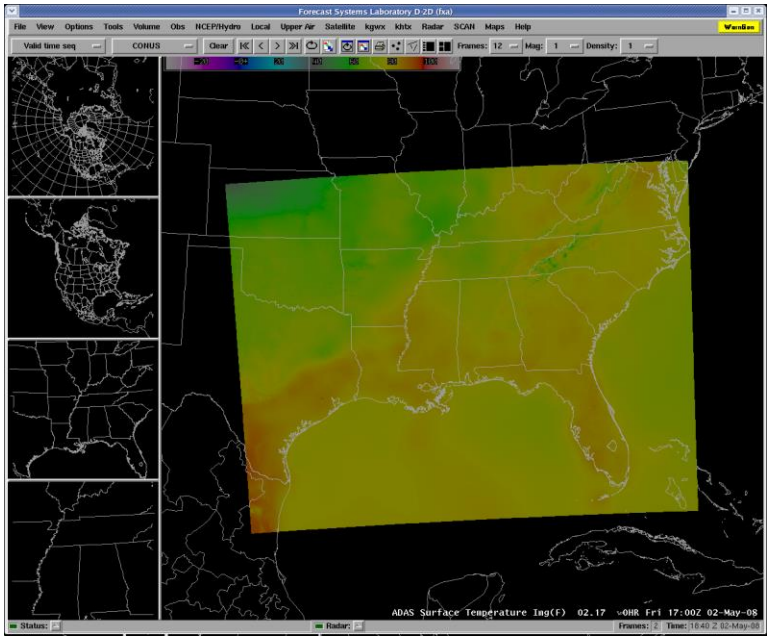
Overview

- What is the SPoRT ADAS*?
  - What are its uses?
- Accessing product in AWIPS
- Comparison with existing analysis
- Missing product expectations and actions

*Advanced Regional Prediction System (ARPS) Data Analysis System (CAPS/OU)

What is the SPoRT ADAS?

- Blends surface data into a coherent analysis using ADAS:
  - Strength in analyzing asynoptic data sets
  - 13-km, 2-h RUC forecast as first-guess
  - METAR, buoy, Mesonet, SAO
- An observation is rejected if it is:
  - significantly different than neighbors
  - greatly different than first-guess
  - blacklisted (user-defined)



- 2-km resolution captures mesoscale features
- Assimilates observations from ±15 minutes from the top of every hour
- Available in AWIPS at 40-45 minutes past every hour

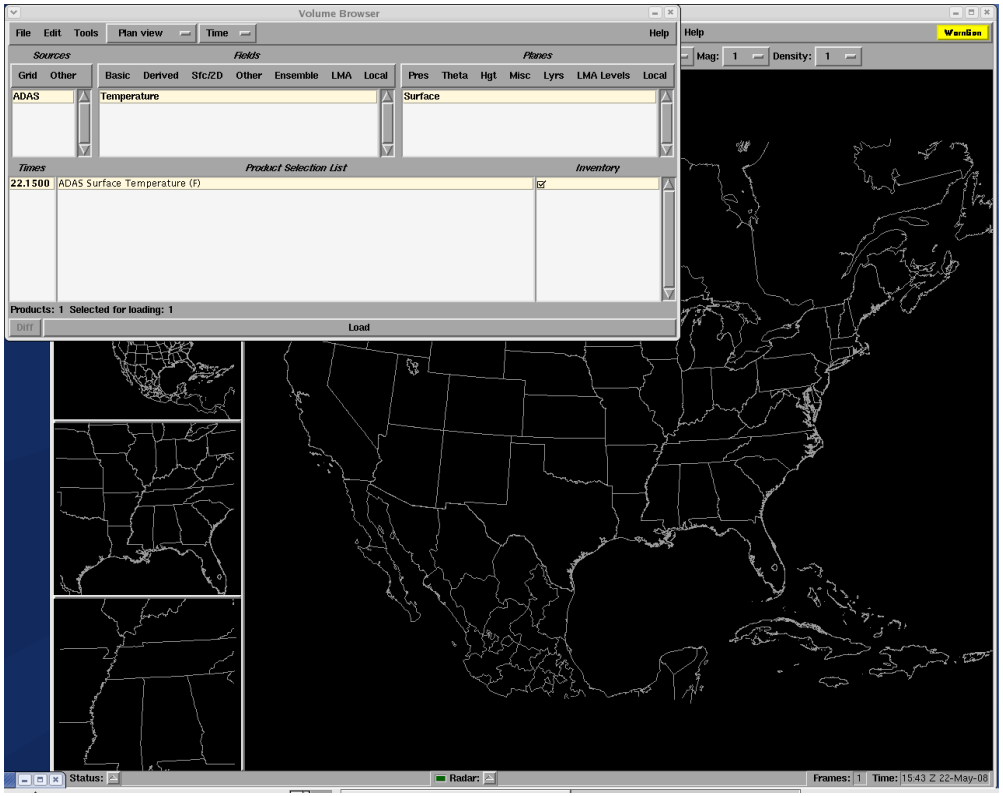
SPoRT ADAS Uses

- Provides an additional high-resolution surface analysis for:
  - real-time meso-analysis
  - initializing grids within gridded forecasts
  - verification of gridded forecasts
- Similar to:
  - LAPS*: quality control issues at times
  - MSAS†: smooth appearance
  - RTMA‡: quality control issues and smooth appearance
- SPoRT ADAS has been most useful in forecasting nighttime temperatures in the elevated regions of NE AL

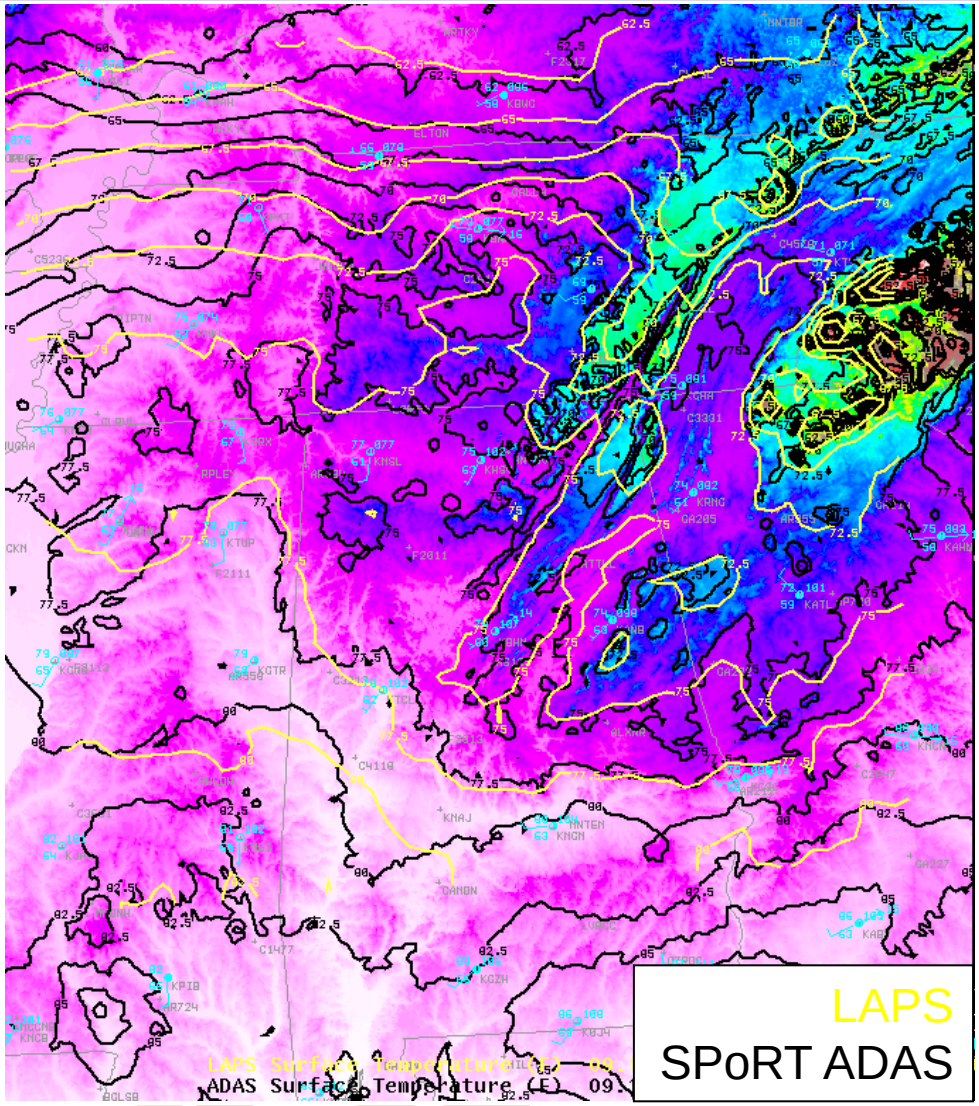
*Local Analysis and Prediction System (NOAA/GSD)
†Mesoscale Analysis and Prediction System (MAPS) Surface Assimilation System (NOAA/ESRL)
‡Real-Time Mesoscale Analysis (NCEP)

Accessing the SPoRT ADAS in AWIPS

- Located under the “Volume” tab on the menu
- Click on “Browser”
- Product appears as “ADAS”
- Variables available:
  - 2-m temperature
  - 2-m relative humidity
  - 10-m winds
  - other variables derived from T and RH



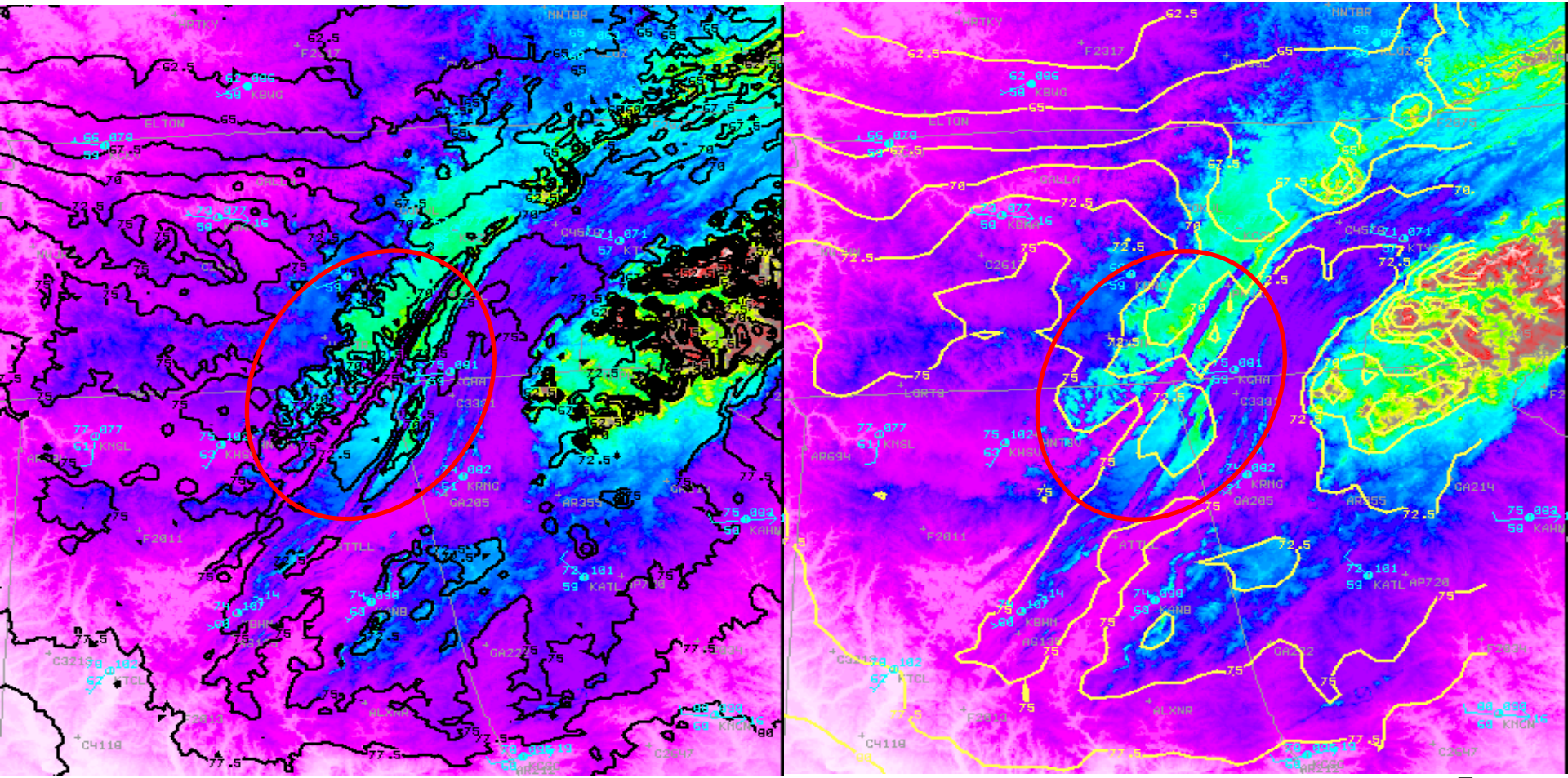
Surface Temperature Comparison



- May 9, 2008 1700 UTC
- Neither analysis shows obvious bulls eyes due to quality control issues
  - One case—may have been no questionable observations
- Better resolution of SPoRT ADAS allows it to pick up sharper gradients
- Especially evident in the higher terrain of eastern Alabama and western Georgia

Surface Temperature in High Terrain

SPoRT ADAS depicts tight gradients associated with terrain features much better than LAPS



- If the file has not arrived by 50 past the hour, there has either been an error in the analysis process or in the transfer of the data from NASA to NWS
- Analyses may occasionally be missing due to unavailable RUC files, missing observation files, or corrupted observation files
- Outages due to errors in the analysis process may last for several consecutive hours
- Contact SPoRT Liaisons Geoffrey Stano and/or Kevin Fuell if a data outage occurs for more than a half day

Summary

- SPoRT ADAS uses good quality control and 2-km resolution to pick up fine-scale features not seen in other surface analyses available in AWIPS
- SPoRT ADAS has proven most useful for nighttime temperature over elevated terrain in eastern edge of HUN forecast region
- Let's work together to analyze this product: feedback on where/when SPoRT ADAS provides better analysis than other available analyses

Science Point of Contact: Brad Zavodsky (Brad.Zavodsky@nasa.gov), 961-7914

For more information on the ARPS Data Analysis System (ADAS)
For more information on the MAPS Surface Assimilation System (MSAS)
For more information on the Real-Time Mesoscale Analysis (RTMA)