The Tracking Meteogram, an AWIPS II Tool for Time-Series Analysis

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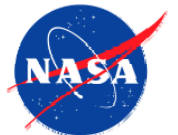
Background

- Plug-in originally developed for Total Cloud Lightning
- Total Cloud Lightning investigation needs to see time trends following storm
- AWIPS I did not have capability to track parameter on moving phenomena -- MDL begins development
- AWIPS II allow development of plug-ins to extend capabilities -- SPoRT begins development
- SPoRT and MDL combine efforts on AWIPS II plug-in

What is Tracking Meteogram?

Meteorological
Feature

Time

Max, Min, Avg,
Range, Std Dev, etc.

Time
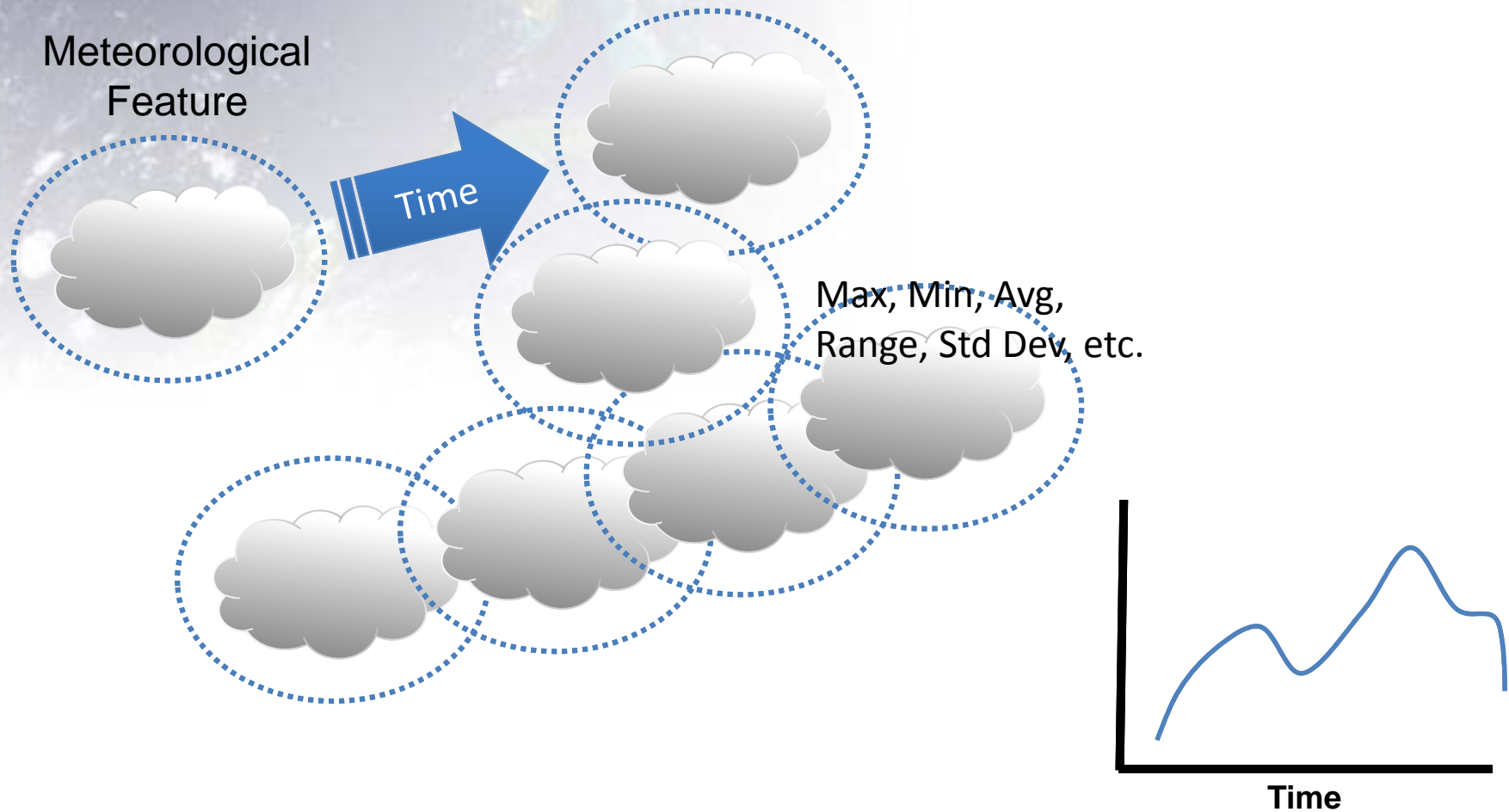
# Total Cloud Lightning Connection
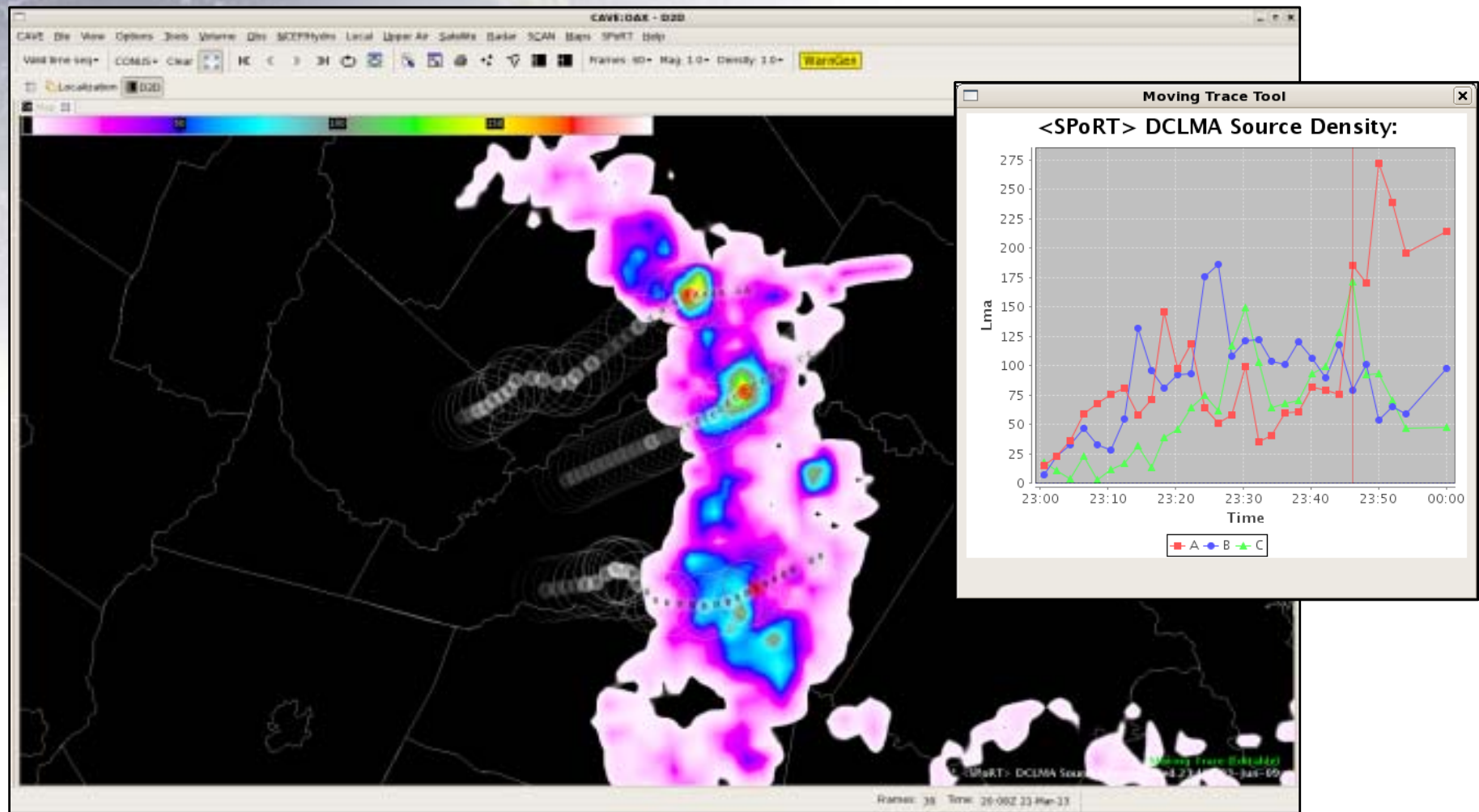
Key Features

- Easy to manage
- Supports multiple linear interpolations per line
  - Radius
  - Location
- Extrapolation of locations when data updates
- Loose coupling with underlying data
- Toggling display features
  - Arrows
  - Circles
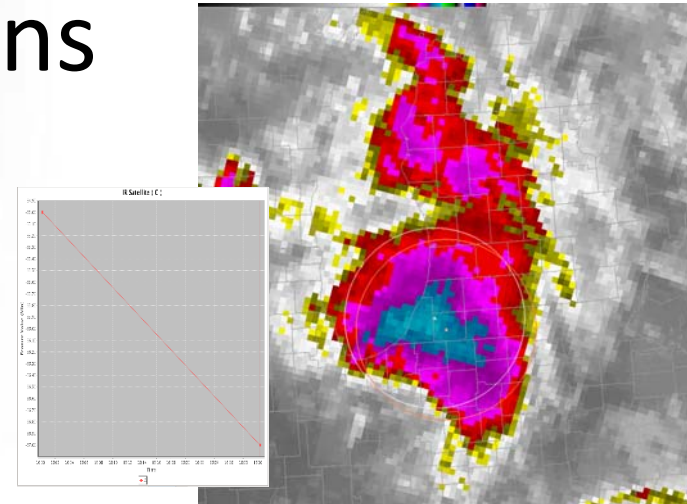- Supports different math operations for each product loaded

Supported Math Operations

- Max

- Min

- Median

- Range Difference

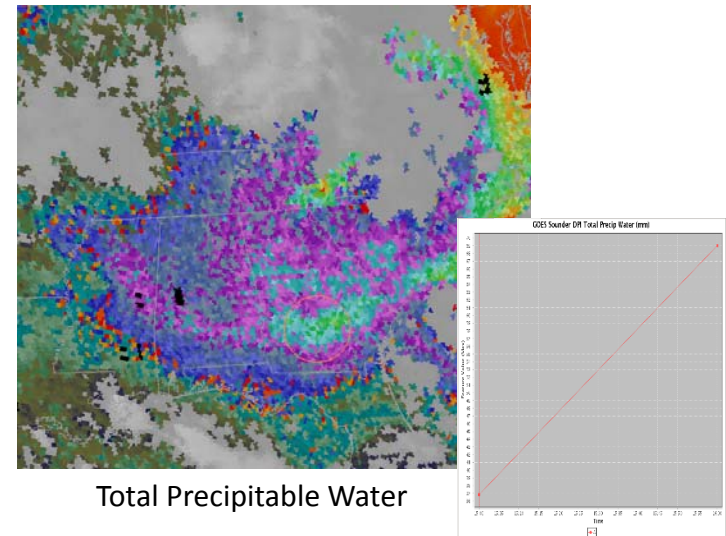- Standard Deviation

- Sum
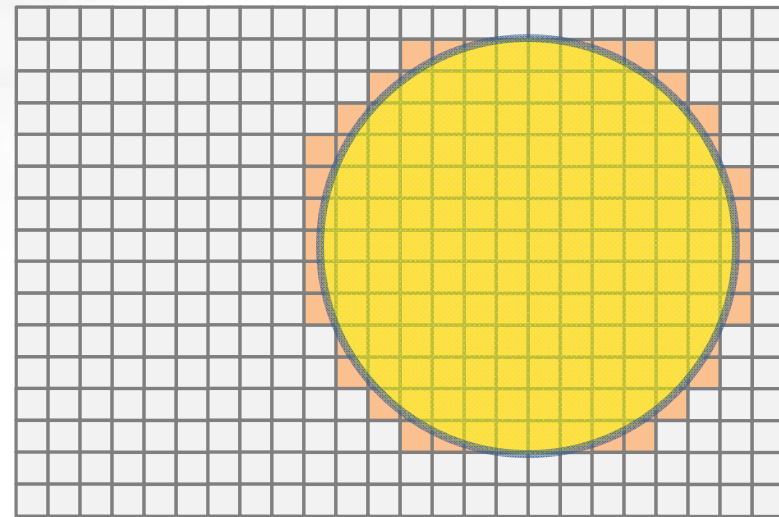
Tracking Meteogram Satellite Applications

- Cloud Top Cooling Rates
- Cloud Height
- Snowfall rate
- Fog
- TPW
- Ozone content trends?
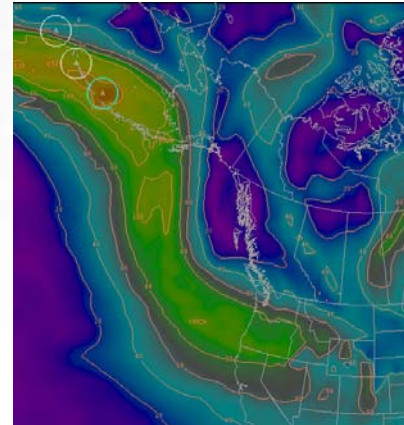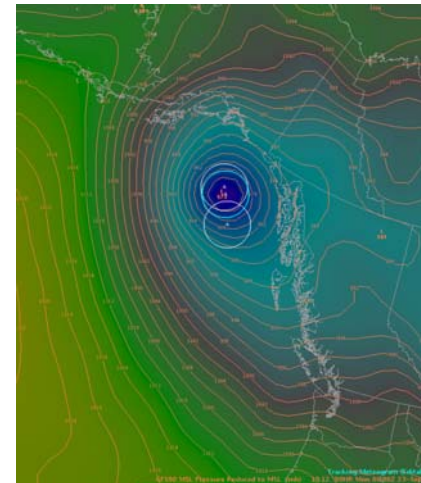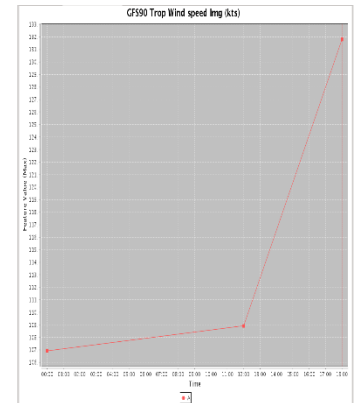- RGB contribution values?
- Future uses?

IR Satellite

Total Precipitable Water

SP⊕RT

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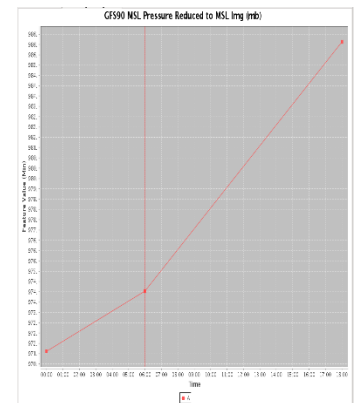# Tracking Meteogram Gridded Applications

- Central pressure of low
- Vorticity
- Minimum Temperature
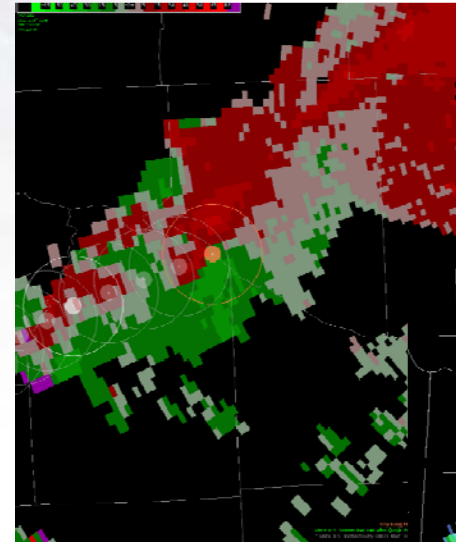- Windspeed
- JetStreaks

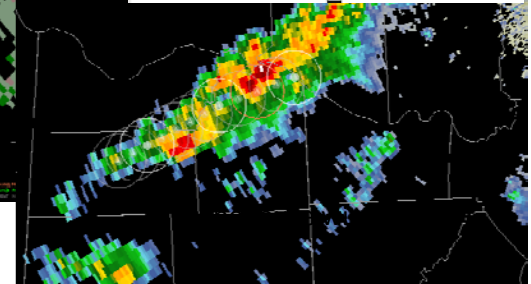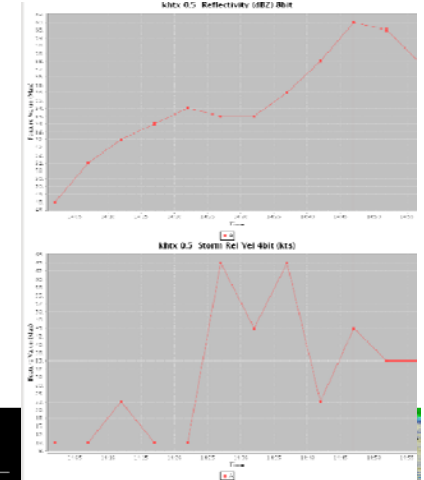Tropopause windspeed

Mean Sea Level Pressure
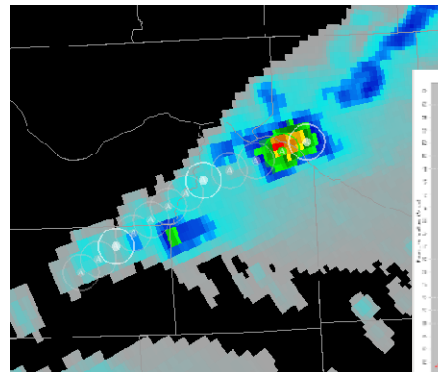
Tracking Meteogram Radar Applications

- Gate to Gate Velocity Difference

- Maximum velocity

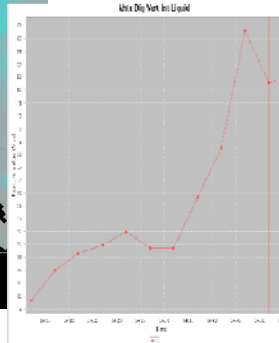- Maximum Reflectivity

- VIL

- Aviation concerns around airport

Storm Relative Velocity

Reflectivity

Vertically Integrated Liquid

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Operations Proving Ground (OPG)

- First plugin to go through OPG
- Week of testing of the plugin at OPG in Kansas City, MO
- Real-time and displaced real-time scenarios to test plugin
- Forecasters at OPG provided feedback
  - Submitted feature and bugs through VLab
  - Developers began working on issues immediately
  - Provided a new version of plugin for testing the same day or next day

Snapping to single location

- Feature forecasters asked for during OPG
- Ability to snap all circles to a single location
- Allows monitoring using a graph of a value
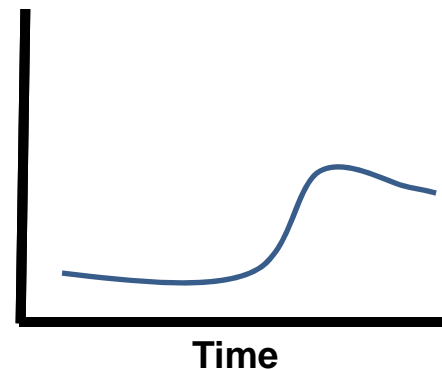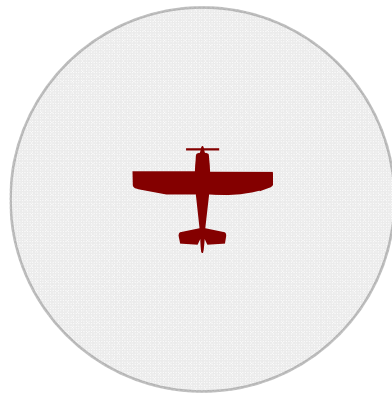
Future

- Delivered in 15.1.1
- Pluggable suggestion framework
  - Allows flexibility with automatic tracking of features
  - Can support multiple modes such as convective, or non-convective
- Other plug-ins can get updates from Tracking Meteogram

Questions

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