Integrating Wind Profiling Radars and Radiosonde Observations with Model Point Data to Develop a Decision Support Tool to Assess Upper-level Winds For Space Launch

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Outline

- Problem
- Data
  - Observations
  - Model Point Data
- Graphical User Interface (GUI)
  - Model Initialization
  - Model Forecasts
    - Profilers
    - Rawinsonde
- Conclusions
Problem

- Launch Directors
  - Want to know upper-level wind forecasts during launch countdown
  - Steering, aerodynamic loads and trajectory
- Launch Weather Officers
  - Should be able to provide the forecasts
  - Limited capability

Solution
- Develop GUI
- Overlay vertical profiles of observations and model data

Observations & Model Data

- KSC
- 50 MHz Profiler
- 915 MHz Profiler
- CCAFS
- AMPS Rawinsondes
- Model Point Data
- RAP, NAM, GFS

Google earth
Launch Weather Officers requested Excel GUI
- Windows PC workstation located in Range Weather Operations

- All code written in Visual Basic for Applications
Model Initialization

- Wind Speed
- Wind Direction

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http://science.nasa.gov/amu
Model Initialization

Model Forecasts – Profiler
Model Forecasts – Profiler

Model Forecasts – Rawinsonde
**Model Forecasts – Rawinsonde**

- Wind Speed
- Wind Direction
- Height (Feet)

**Conclusions**

- Launch directors need to know upper-level wind forecasts
- Developed an Excel-based GUI to display upper-level winds
  - Rawinsonde at CCAFS
  - Wind profilers at KSC
  - Model point data at CCAFS
Questions?