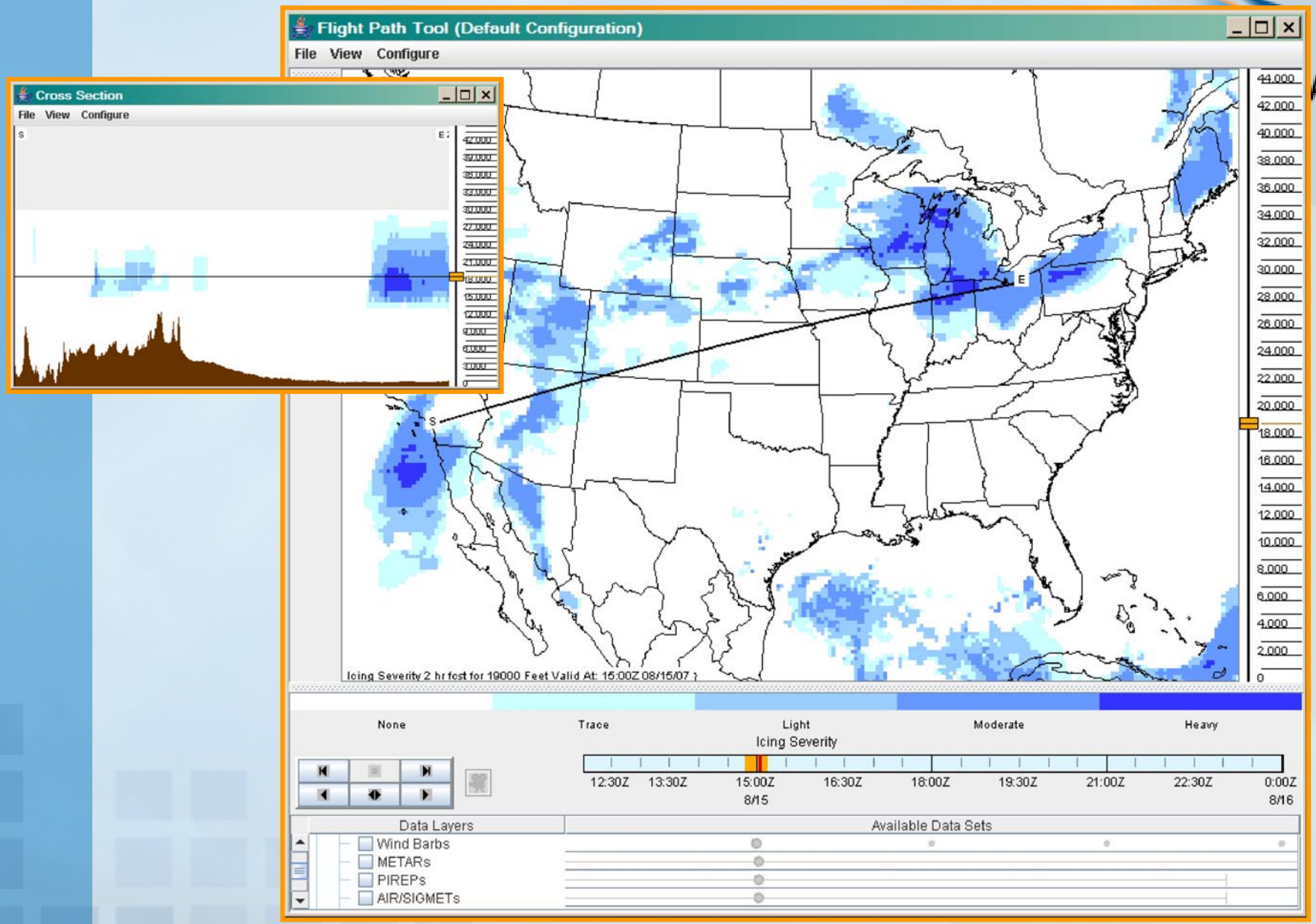
Active Research Areas

- **Diagnosis**
  - Current Icing Algorithm
  - NASA LaRC Advanced Satellite Aviation-weather Program (ASAP)
    - Icing product, cloud tops, cloud phase, liquid/ice path, particle size
- **Forecast**
  - Forecast Icing Algorithm
  - Basic model parameterization research
  - G-AIRMET support
- **Detection**
  - NEXRAD-based algorithms
  - NASA Icing Remote Sensing System (NIRSS)
  - On-board radiometers and radars
- **Icing Physics**
  - Analysis of research aircraft data sets
  - Scales of icing
  - Icing characterization
  - Geographic variations
  - Roles of aerosols on cloud physics

Algorithm Status

- CIP Severity is now fully operational – unrestricted supplementary
- FIP Severity is experimental – restricted supplementary – and goes operational in May 2008
- Alaska work was suspended in FY07, FY08 plans not known at this time
- A Freezing Drizzle algorithm is under development at NCAR for NEXRAD application and will be implemented on the NSSL 3D national mosaic in FY09, ORPG implementation to follow in ~FY11/12



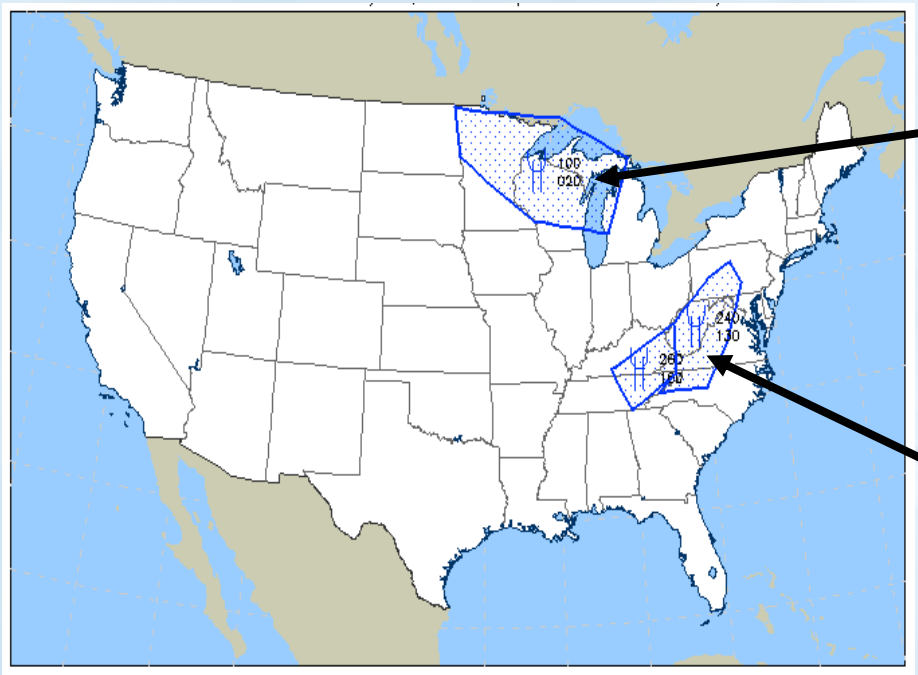
CIP: severity displayed at FL190 and cross-section from LAX-CLE

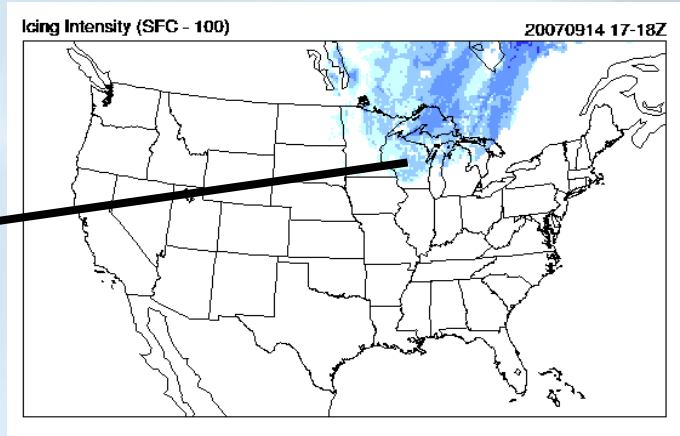
Product	D2	D3	D4	Effective Operational Date
CIP Severity	na	8/26/04	10/4/06	12/6/06
FIP Severity	na	3/31/07	May'08	Jul'08
CIP-AK	10/1/02	11/13/03	Jul'09[1]	Sep'09[1]
FIP-AK	10/1/02	11/17/04	Jul'09[1]	Sep'09[1]
NA C/FIP	FY08	FY10	FY12	FY12
Global C/FIP*	FY08	FY09	FY11	FY11

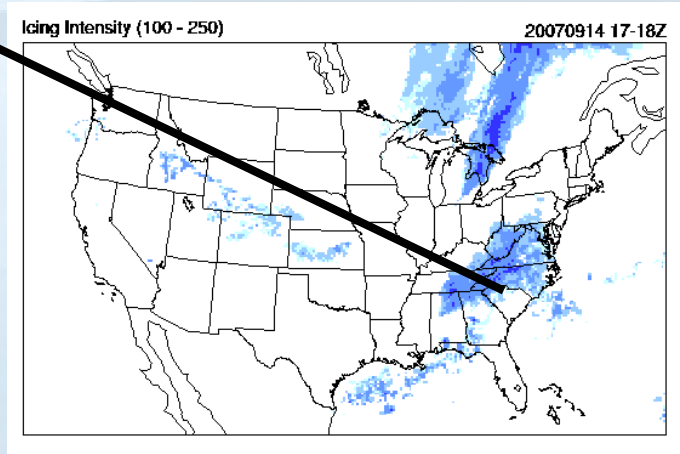
[1] *Pending resumption of AWRP tasking in FY08*

[2] *Note that Global C/FIP will be at lower time and space resolution than NAC/FIP,thus the shorter lead time*

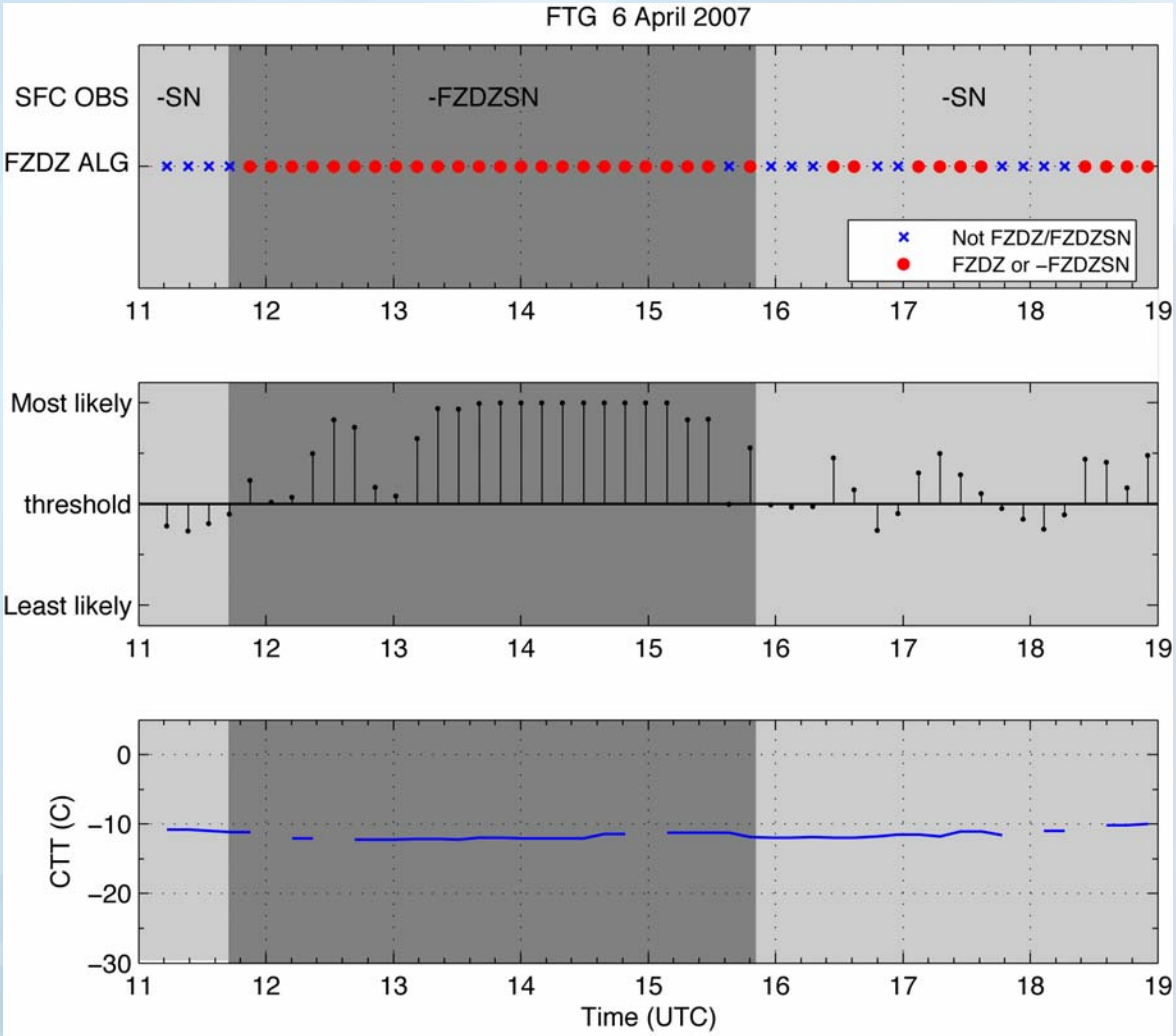
G-AIRMET/"Smeared" FIP







NEXRAD-based freezing drizzle product



R&D Summary

- **Progress!! Success!!**
- **Coordinate with**
  - MDL and AWC for HOTL and GFA
  - DOD for ensemble forecasts, database
  - JPDO for planning – CONUS icing is a 2012 IOC product
- **Incorporate new data sources as we learn to extract relevant information**
  - NSSL 3D radar mosaic
  - NASA LaRC satellite products