Icing Remote Sensing at NASA Glenn Research Center

David Brinker

Friends/Partners in Aviation Weather Forum
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Goal - Icing detection capability similar to current thunderstorm detection

**Icing Capability**

- Currently: no ground-based icing detection to give the big picture

**Thunderstorm Capability**

- Currently: no airborne icing detection to help crews avoid encounters
NASA Icing Remote Sensing Vision

Ground-based: testbed

Terminal-based: data for all A/C

Airborne: Data for entire flight
Icing Detection 101

• Looking for supercooled liquid water
• At a minimum need to know:
  – Temperature distribution
  – Liquid water content distribution
• We’re currently doing this with:
  – Multi-frequency Microwave Radiometer
    • Total water content
    • Temperature distribution
  – Radar
    • Cloud boundaries
  – Lidar (ceilometer)
    • Cloud base/precipitation discrimination
NASA Ground-based Testbed System
Web-based Fusion Software
Testbed Data Available On-line

http://icebox.grc.nasa.gov/RSData/index.html
Advanced System Development

Airborne Multi-Frequency Radar

Scanning Ground-based Radiometer