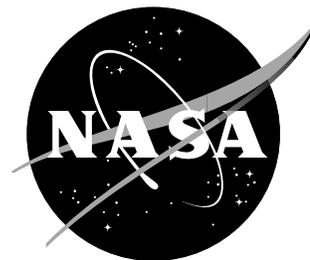


# NewsRelease



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## **COMBINING EARTH SCIENCE AND AVIATION NASA Scientists Could Provide Severe Icing Warnings to Pilots**

In the future NASA scientists could enhance current warning systems that update pilots of dangerous icing conditions and provide this information in near real-time.

Bill Smith Jr., a scientist from NASA's Langley Research Center in Hampton, Va., will report on the research at the American Meteorological Society (AMS) meeting this week in Portland, Ore.

"Our research is unique because we are able to derive information from satellite data that indicate where icing conditions exist near the tops of clouds," said Smith. "The technique allows us to determine the cloud temperature and the existence of water droplets at temperatures below freezing."

Water droplets often exist in clouds at temperatures below freezing and pose a problem for aircraft because they freeze on contact with an airframe's surface. Depending on how much ice accumulates on the airframe, the pilot's ability to control the aircraft may be significantly reduced.

"The technique also allows us to derive the amount of condensed water in clouds and the water droplet sizes, two important factors that determine the degree of icing severity," said Smith.

Smith and colleagues are working to determine cloud properties that reveal where icing conditions exist and the potential icing severity from operational satellite observations -- the same imagery we see in weather forecasts on television. They are currently validating this technique with pilot reports and aircraft measurements of icing over the central United States using a research aircraft from NASA's Glenn Research Center in Cleveland.

NASA's Aviation Safety Program's Weather Accident Prevention Project is planning to expand this research with the goal to enable an operational icing warning system for the entire continental United States. This technology will eventually be available to commercial and general aviation pilots through Aviation Weather Information systems being developed by the Aviation Safety Program.

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“We’ve already developed a near real-time analysis of the satellite data, and we could provide icing diagnosis and severity information during the daytime to pilots every 15 to 30 minutes,” said Smith.

Smith will present his talk titled “Supercooled Liquid Water Cloud Properties Derived from GOES: Comparisons With In-Situ Aircraft Measurements” during the Conference on Aviation, Range and Aerospace Meteorology.

For more information, visit <http://www.larc.nasa.gov>.

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