

## Experimental Validation of a New Balloon-Borne Supercooled Liquid Sensor

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An improved version of the ATEK Corporation vibrating wire sensor, used to measure supercooled cloud liquid water content (LWC), has been developed by Anasphere, Inc. This updated sensor reduces the weight of the instrument while improving performance when compared to the preceding balloon-borne sensor that was developed in the 1980's by Hill and Woffinden. Results from recent laboratory testing show that data collected from the Anasphere sensor compares well to data reported during similar icing tunnel testing in 1989 at Eglin Air Force Base with the ATEK Corporation instrument. Balloon-borne test flights were performed from Boulder, Colorado during February and March of 2012 providing comparisons to integrated liquid water and profiles of liquid water content derived from a collocated multichannel profiling radiometer built and operated by Radiometrics Corporation. Inter-comparison data such as these are invaluable for calibration, verification, and validation of remote-sensing instruments. The data gathered from this sensor is important in the detection of icing hazards to aircraft and for truthing of microphysical output from numerical models. The disposable Anasphere vibrating wire sensor interfaces with an InterMet Systems iMet radiosonde measuring pressure, temperature, humidity, wind speed, and wind direction.

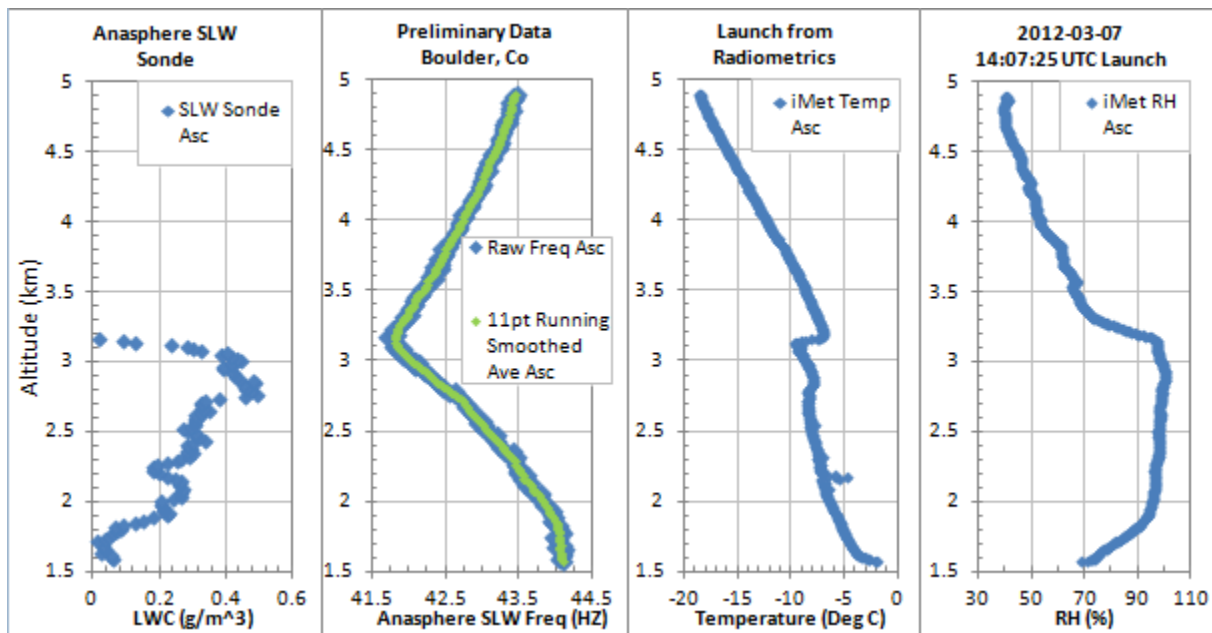


Figure 1. Anasphere SLW Sonde ascent data from March 7, 2012.