


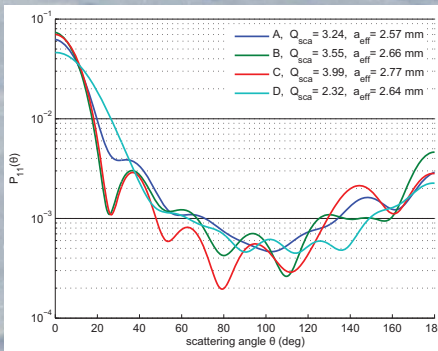
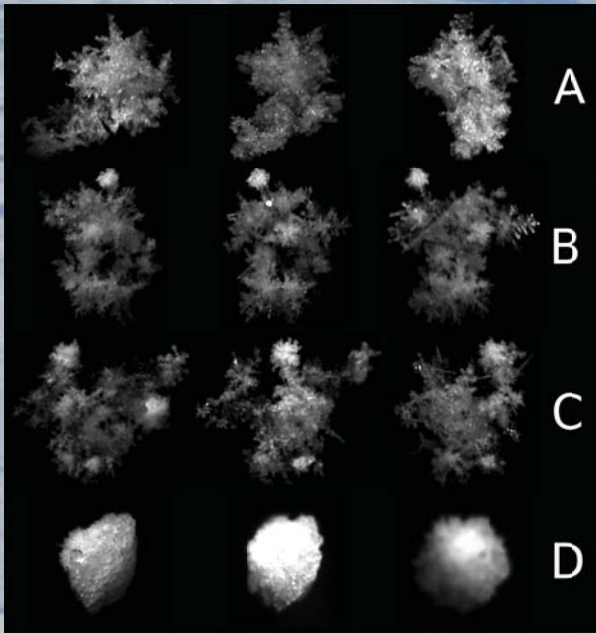
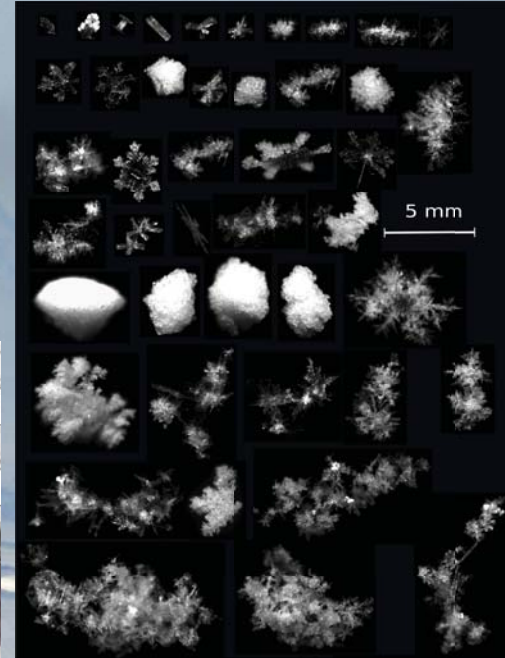
A New Instrument for High-Speed, High Resolution Stereoscopic Photography of Falling Hydrometeors with Simultaneous Measurement of Fallspeed

 **Tim Garrett, Cale Fallgatter, Konstantin Shkurko**
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 "Howie" Alta Ski Area

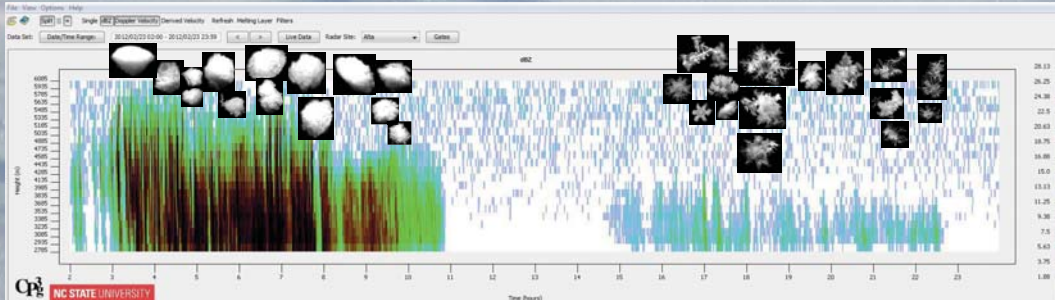
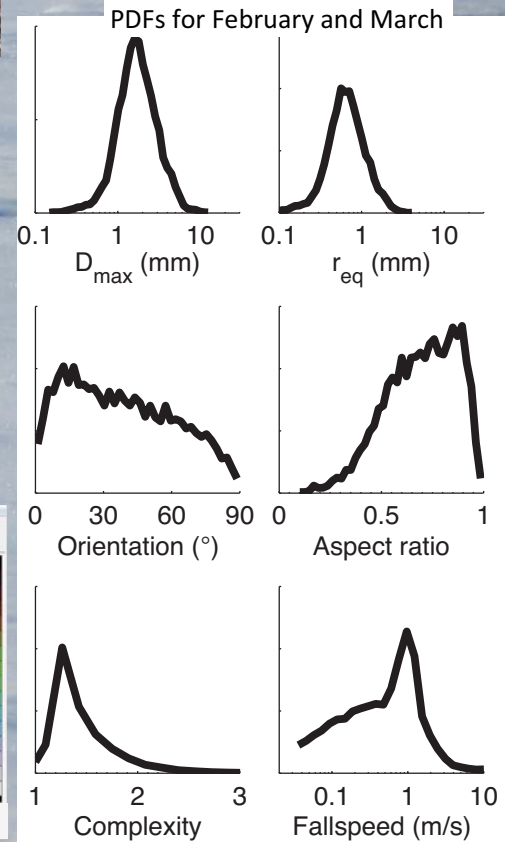
Sandra Yuter, Nate Hardin, Jennifer Dean, North Carolina State University

The Multi-Angle Snowflake Camera (MASC) provides up to 9 micron resolution stereoscopic photographic images of individual falling hydrometeors along with their fallspeed. The MASC uses a sensitive IR motion sensor for a trigger and photographs the particle surface from multiple angles.

The potential is for improved calculations of the relationships between hydrometeor microwave scattering properties and their microphysical and fallspeed properties. This past winter, we deployed two MASCs, an FSSP-100, meteorological instrumentation and a vertically pointing MicroRainRadar to Alta Ski Area near Salt Lake City. This poster shows hydrometeor statistics and 94 GHz scattering calculations based on the data obtained between February and April, 2012.



Discrete Dipole Approximation calculations at 94 GHz, averaged over the triplet views for hydrometeors A to D



Time-height plot of reflectivity from 24 GHz MicroRainRadar with coincident MASC images