DEPARTMENT OF
ATMOSPHERIC SCIENCES
COLLEGE OF GEOSCIENCES
TEXAS A&M UNIVERSITY

(preliminary) CLASIC Airborne (aerosol) Results

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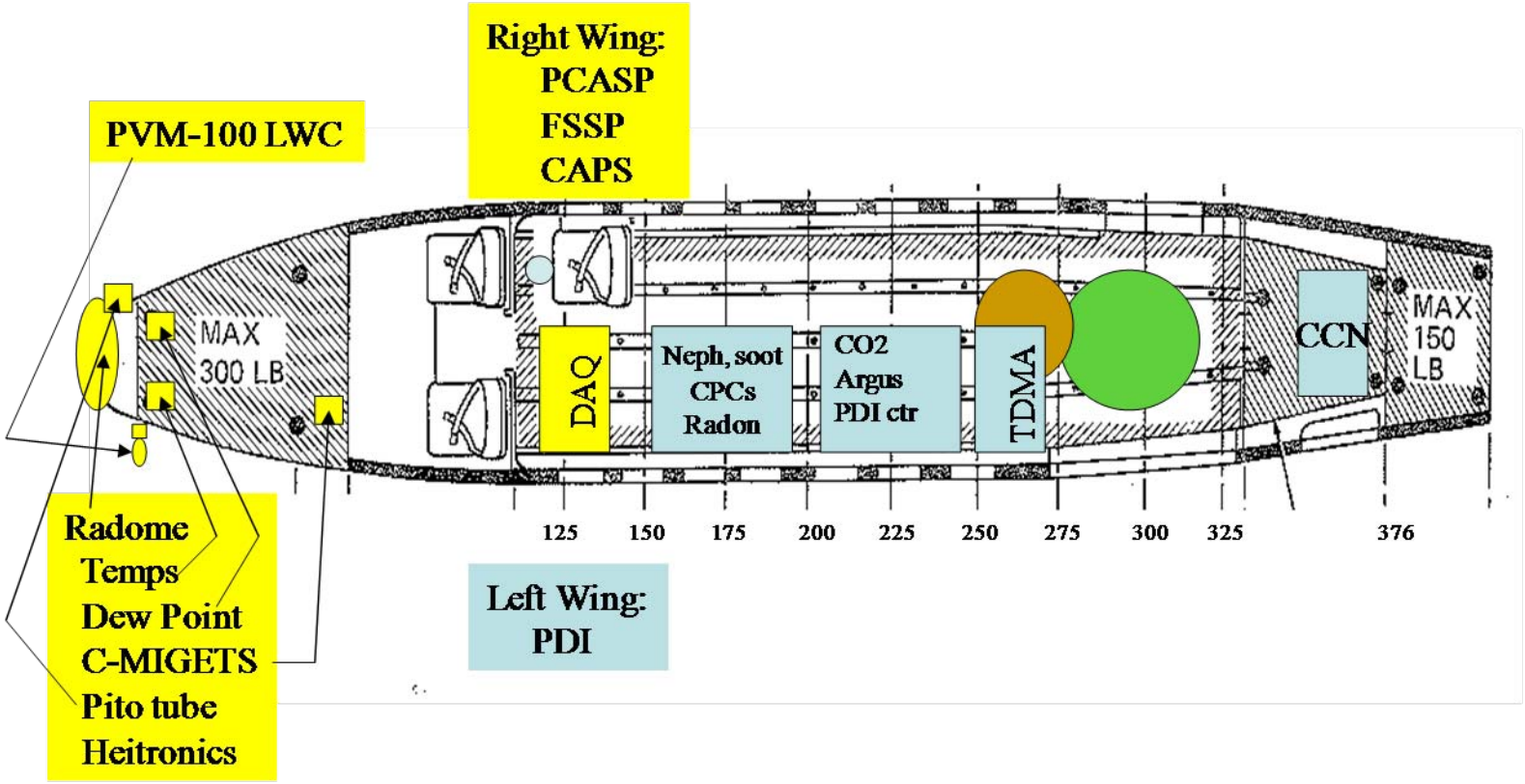
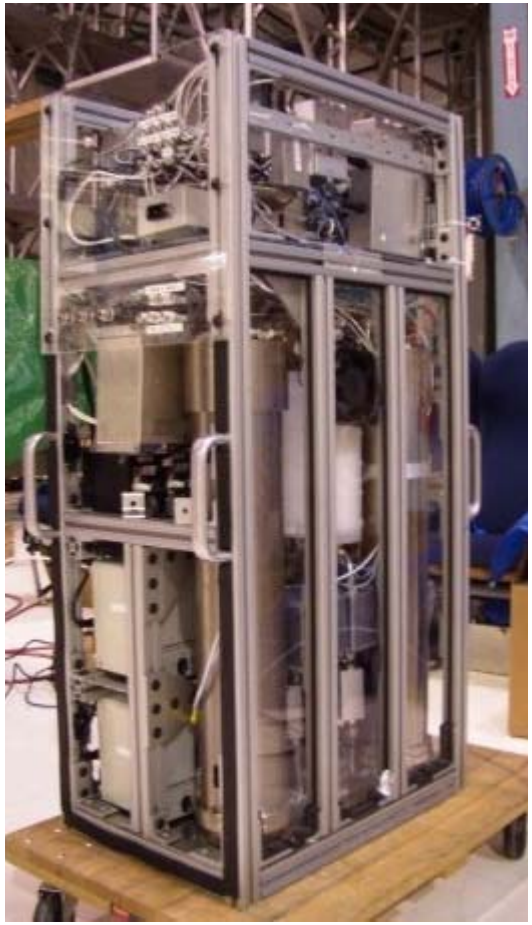
CIRPAS Twin Otter

14 Research flights between June 11 and June 30

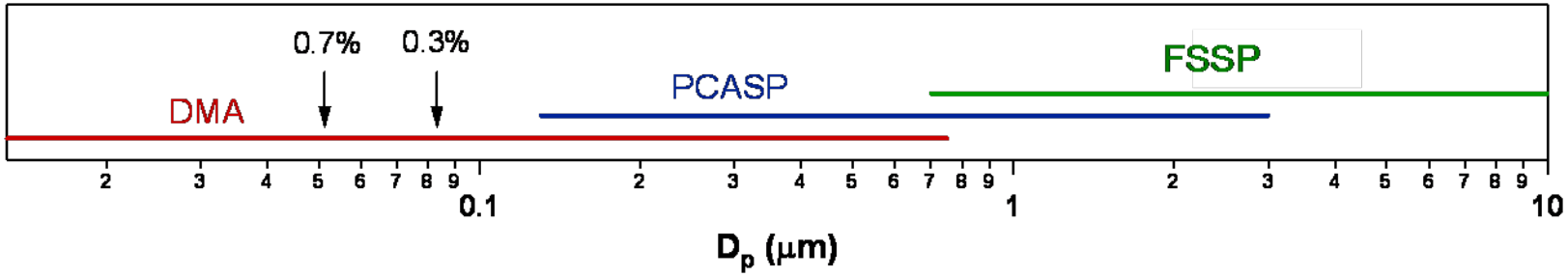
Twin Otter instrument payload



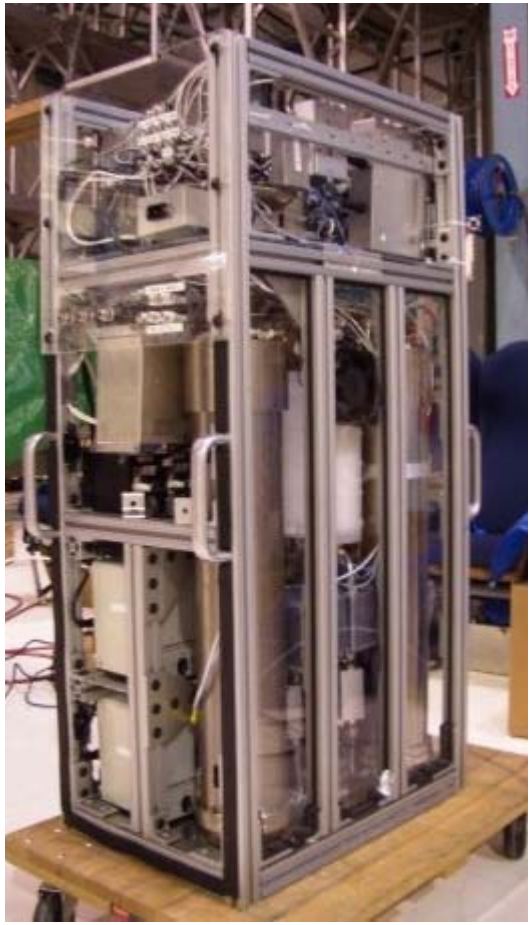
Differential mobility analyzer (DMA)



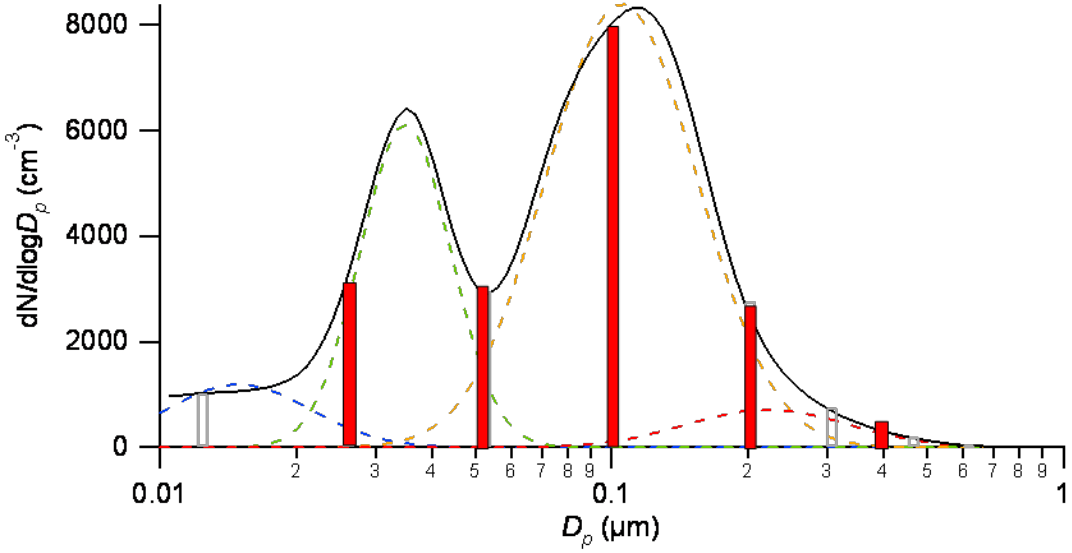
- Measured dry particle size distribution every ~ 75 s
- > 1300 measured during CLASIC
- Use of high flow DMA maximizes count rate
- Required no on board operator



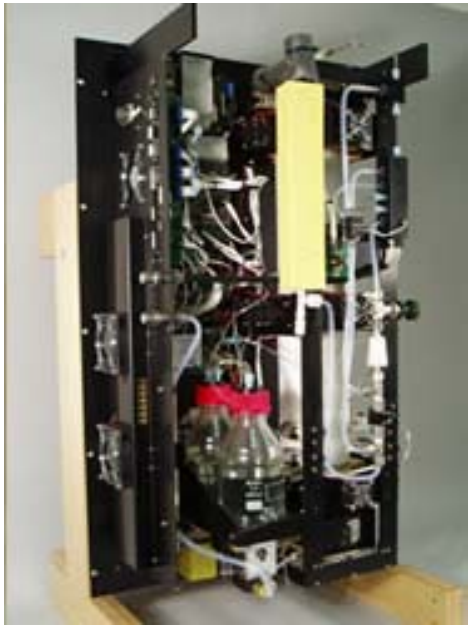
Tandem differential mobility analyzer (TDMA)



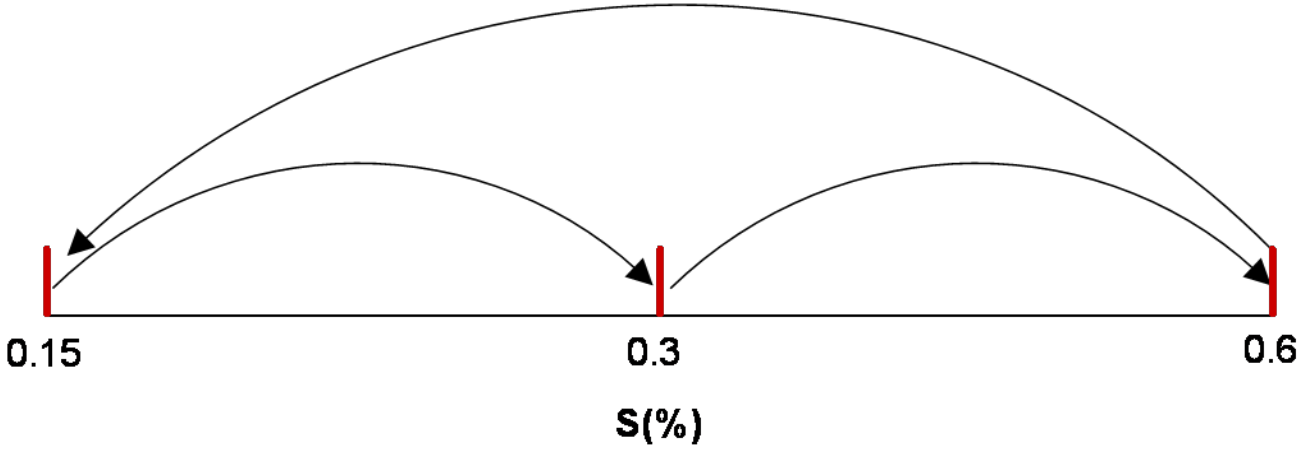
- Measured size-resolved hygroscopicity, G(RH).
- Inter-DMA RH maintained at 85±2%.
- Plexiglass enclosed frame maintained at constant temperature to improve RH control.
- Measurement of one particle size required 3 min.
- Measured > 110 for each size during CLASIC



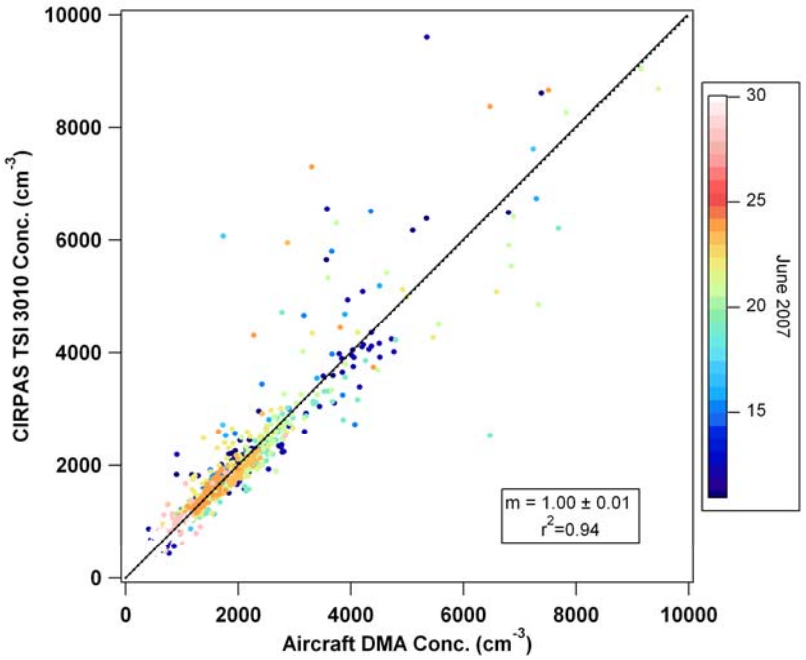
Cloud condensation nuclei counter (CCNc)

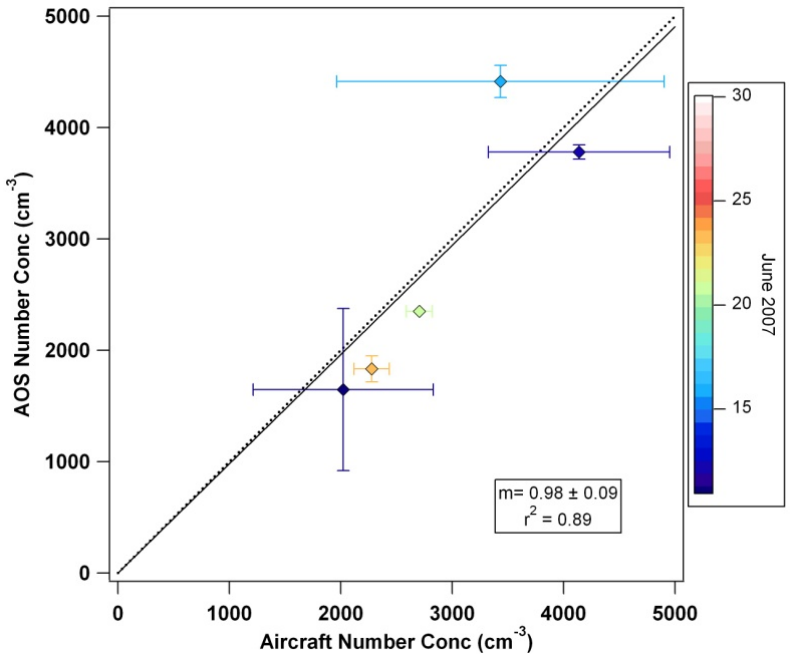


- Same DMT model operated in the SGP AOS trailer.
- Stepped through supersaturations every ~ 3 min.
- On board scientist toggled between cycling through ~ 3 S (constant altitude legs) and remaining at a single S (profiles).

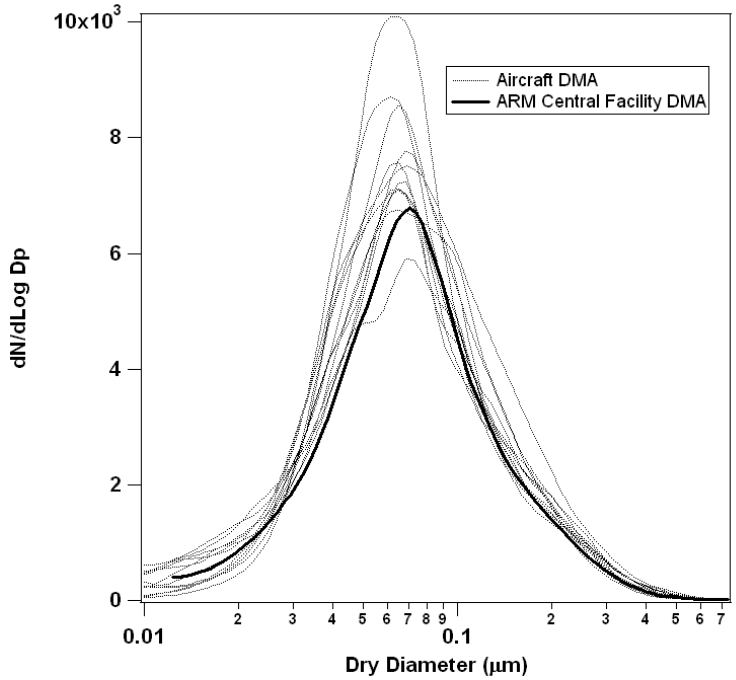


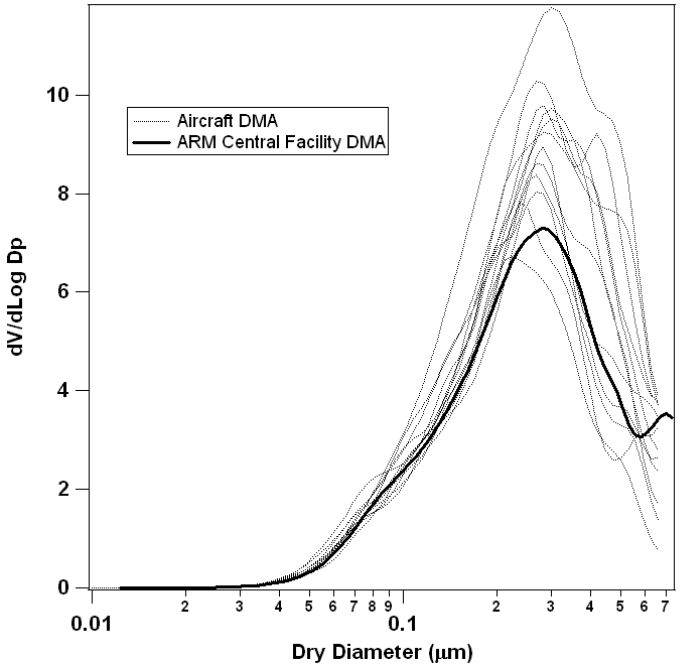
Total particle concentration comparisons



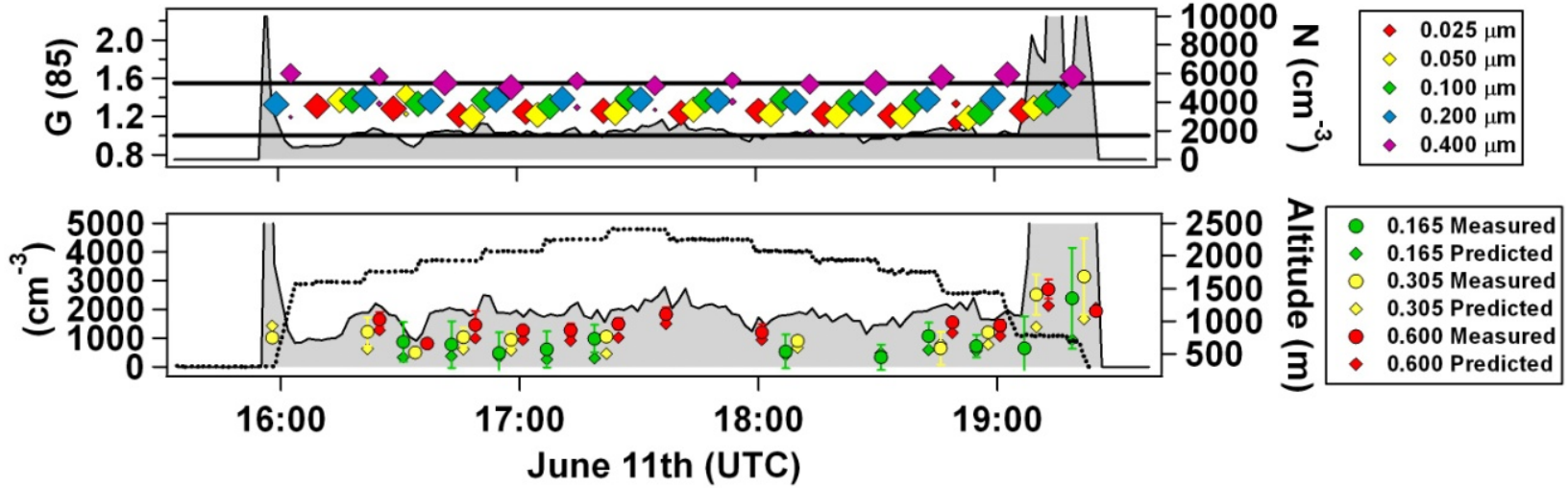


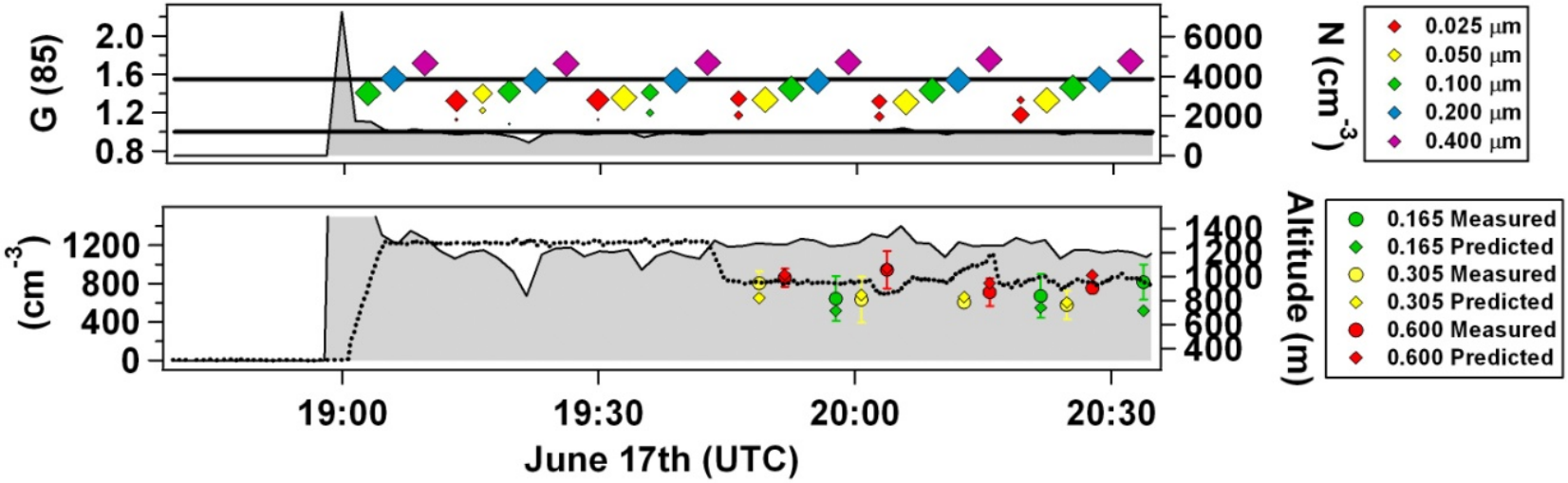
TO / SGP size distribution comparisons





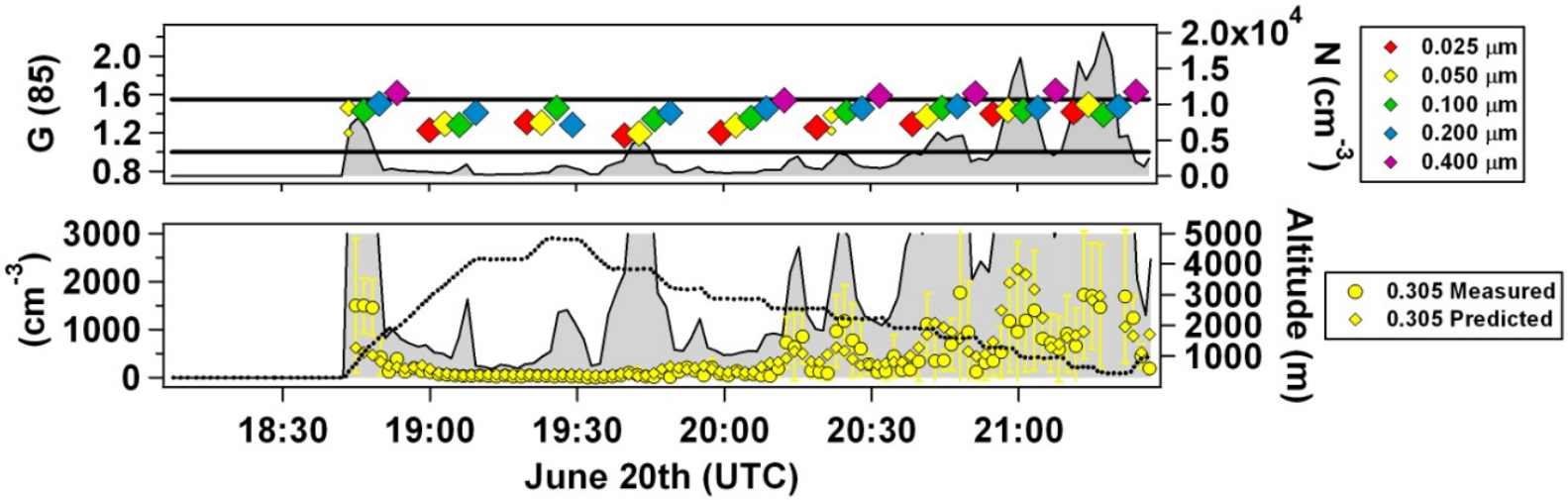
Time series for multi-S CCNc operation

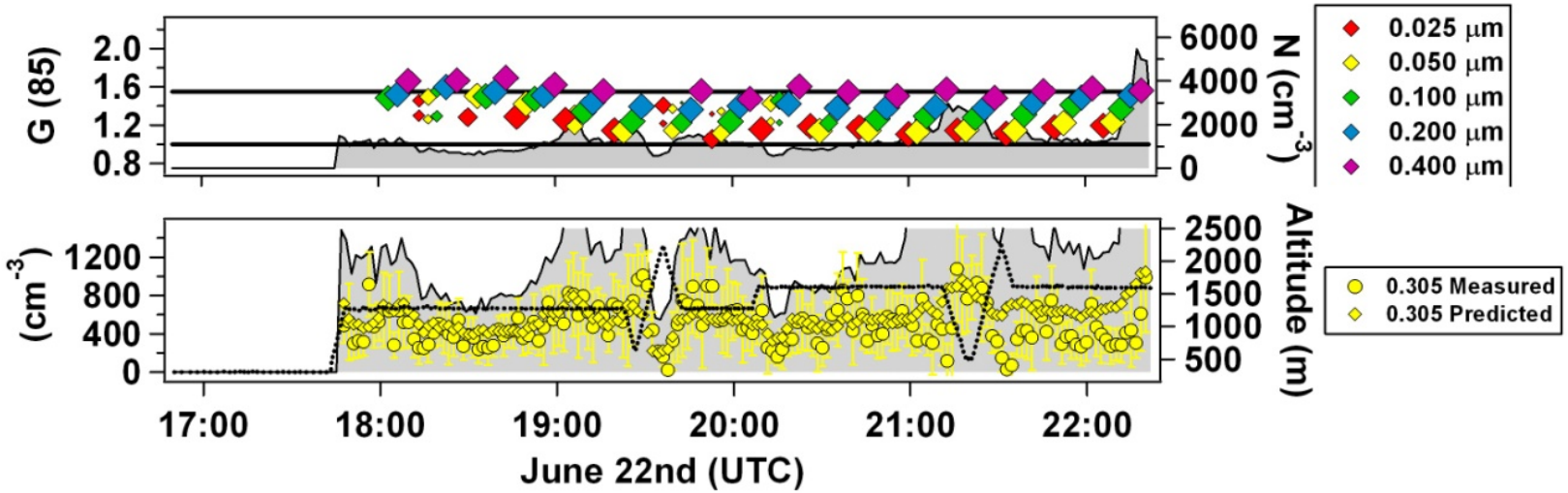




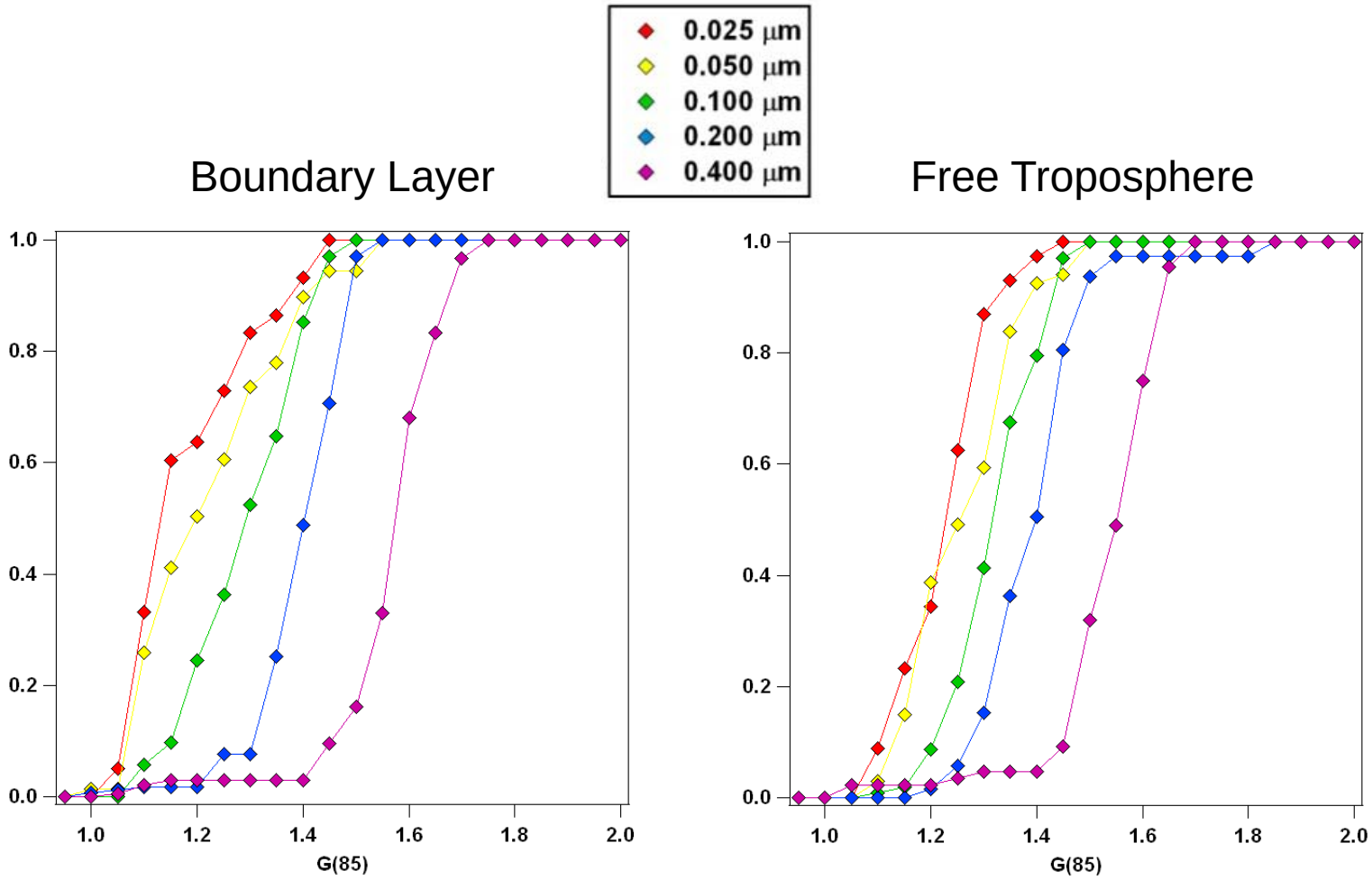
Time series for single-S CCNc operation

Aircraft overview
Aerosol instruments
Initial comparisons
Example data
Data webpage





Hygroscopicity cumulative histograms



Project webpage

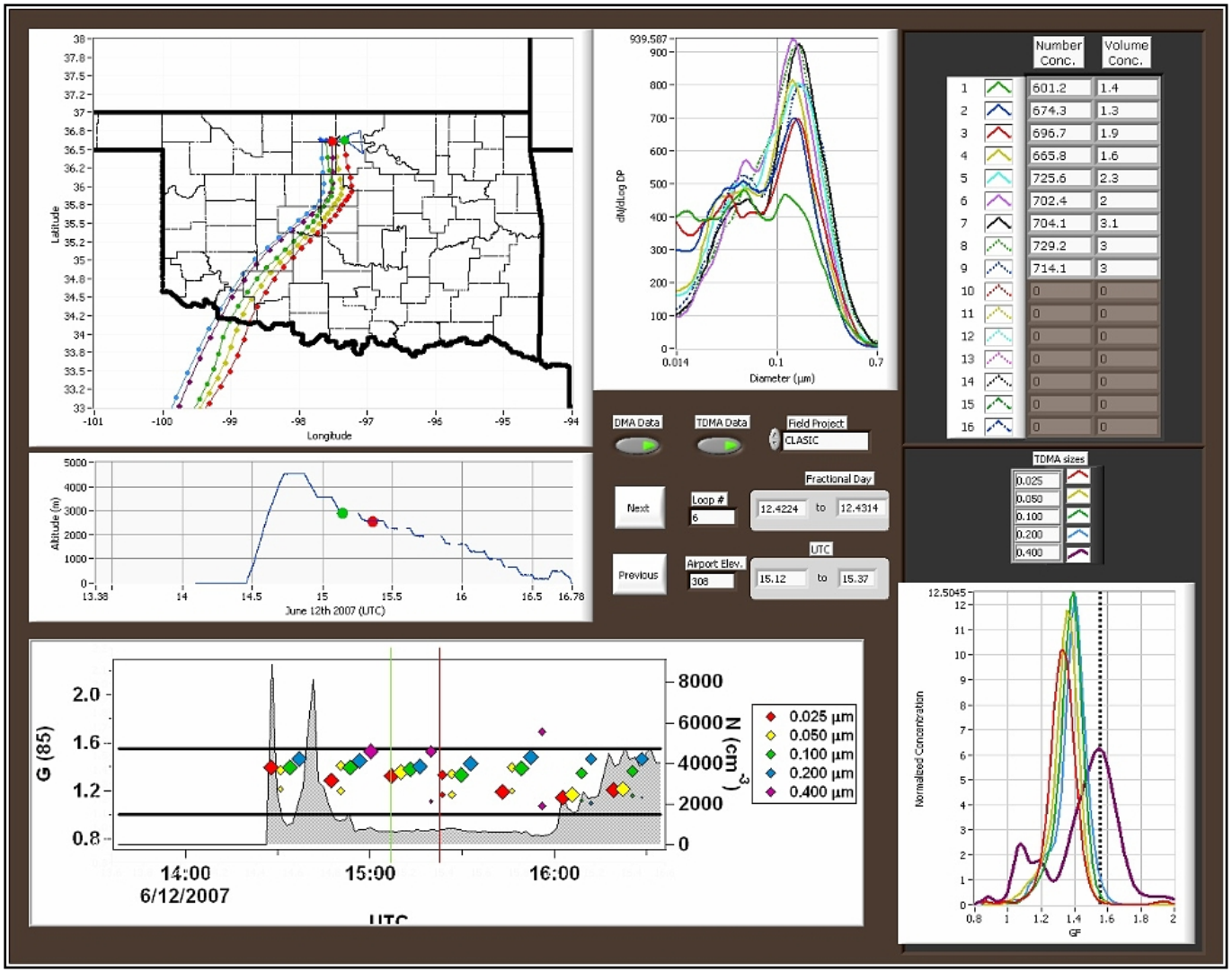
Aircraft overview

Aerosol instruments

Initial comparisons

Example data

Data webpage



Link to webpage