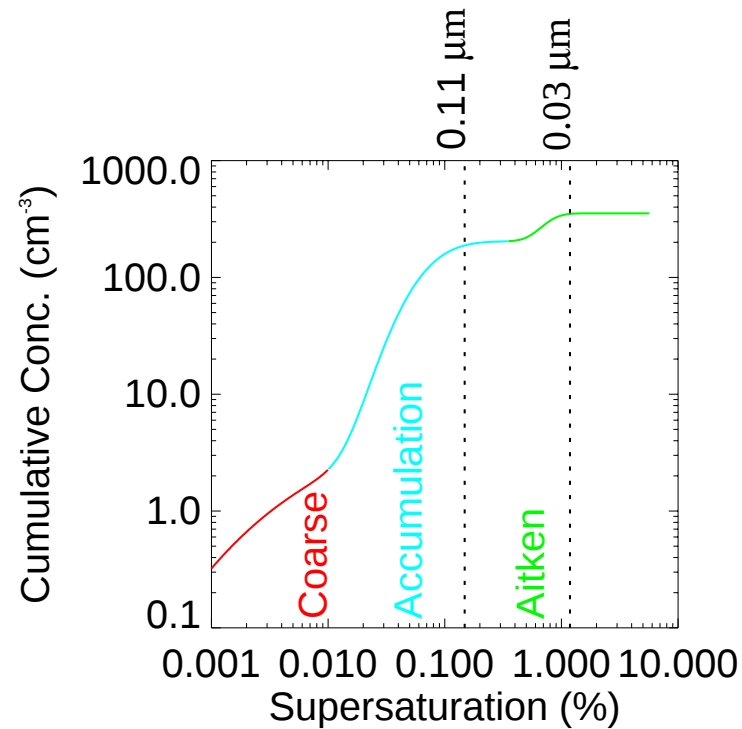
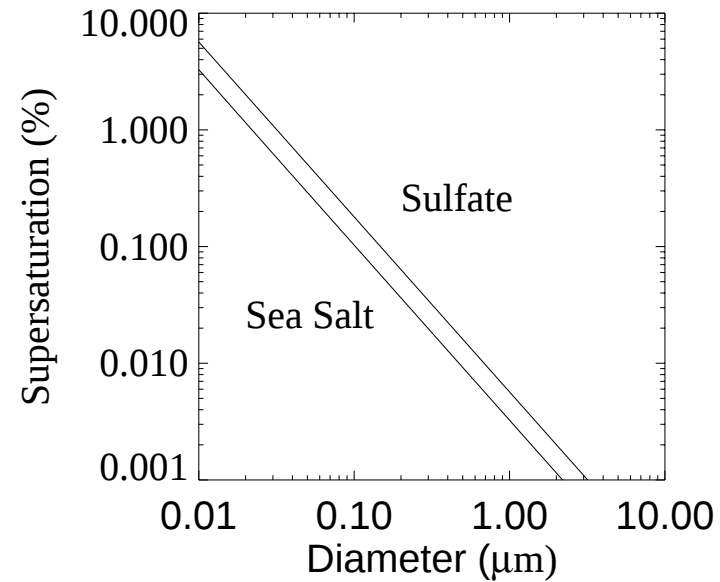
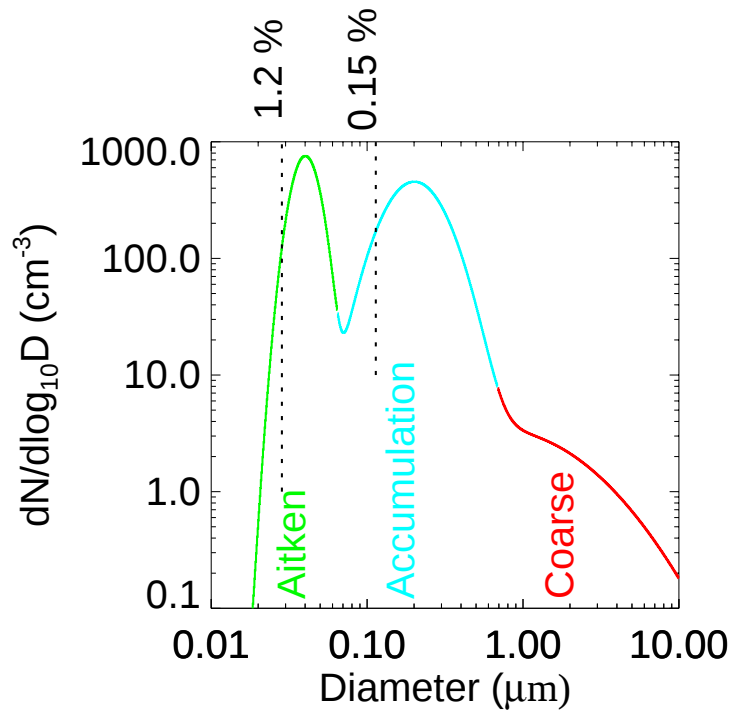


CCN Measurements in and Above the Boundary Layer

**Jefferson Snider
Dept. of Atmospheric Science
University of Wyoming**

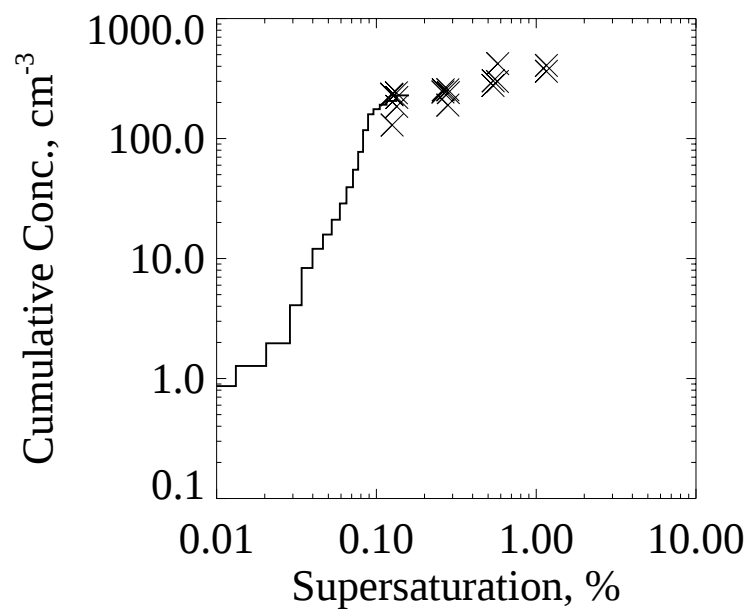
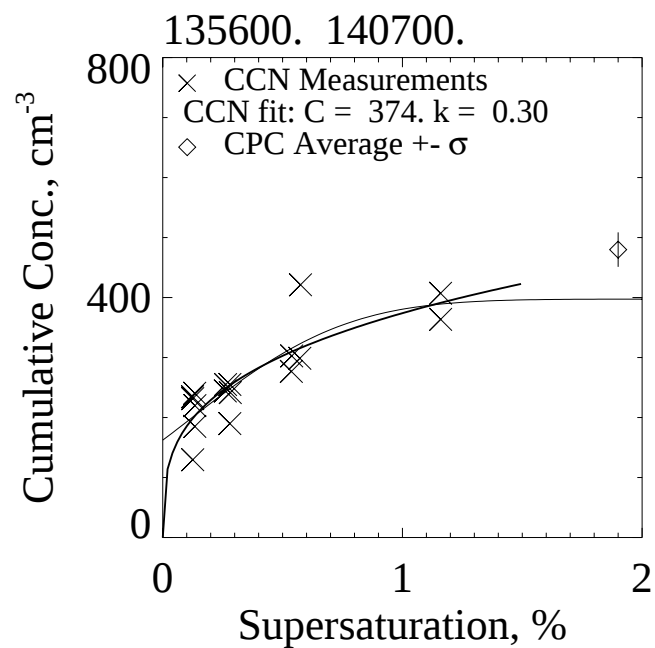
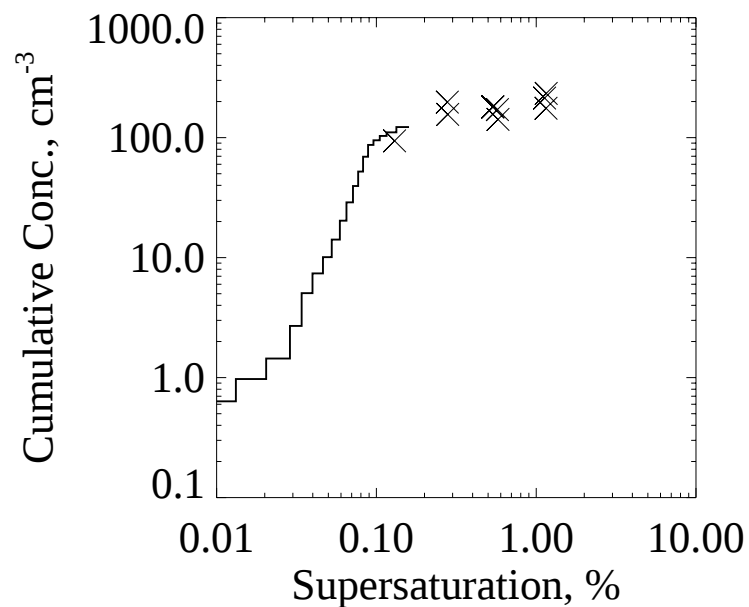
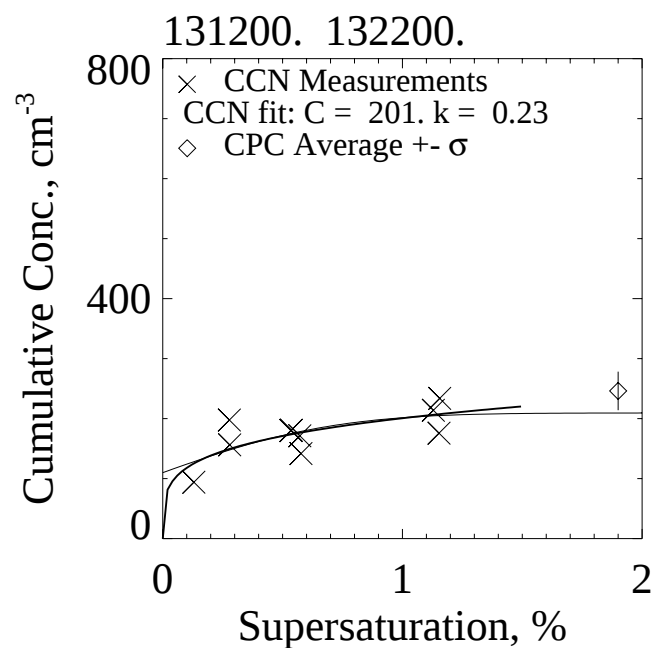


Concentration of particles which nucleate condensation at a specified supersaturation:
The CCN Activation Spectrum

General Comments about our CCN Measurements

- 1. Shattering of droplets and drops produces a large positive bias of concentration**
- 2. CCN concentration at large supersaturation (S) should not exceed the particle concentration measured with a condensation particle counter**
- 3. Consistency expected between CCN concentration at $S=0.15\%$ and the PCASP-measured aerosol concentration (the total of particles larger than $\sim 0.11\ \mu\text{m}$)**
- 4. CCN activation spectrum, and vertical air motion, are the starting point for describing cloud droplet formation**

VOCALS Results from RF05, a 20° S Crossection Flight



Ten C-130 Flights

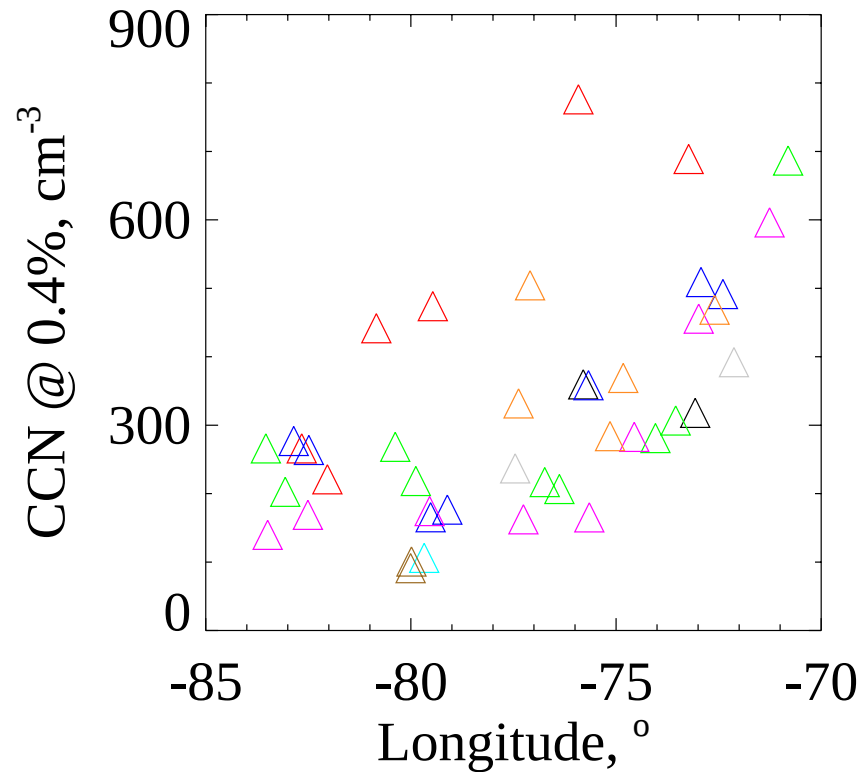
10 minute flight sections

500 ft above the sea

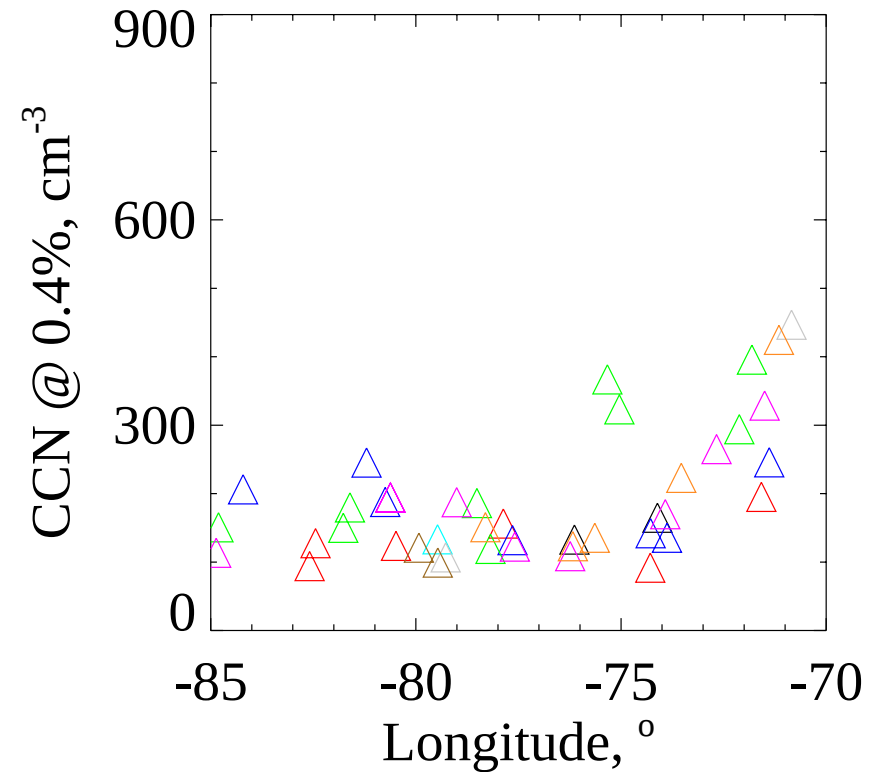
1000 ft above cloud top

2008-10-15 2008-10-18 2008-10-21 2008-10-23 2008-10-25 2008-10-28 2008-10-31 2008-11-02 2008-11-04

Sea Surface



Above Cloud



Poorly understood new particle formation phenomenon above cloud top

Sounding from RF07 (one of the POC missions)

