

There are sometimes 3 files per flight. This is all cumulative data-concentrations per cm^3 with critical supersaturations (S_c) less than the supersaturation (S) value at the top of the column. Concentrations are normalized to sea level pressure, so these are essentially mixing ratios. The actual number per cm^3 at the lower pressures at higher altitudes are lower because of the volume increase with altitude. The file labeled both (e.g., JY12both.txt) is the best—it is a limited data set for time periods when both DRI CCN spectrometers were sampling ambient and were in agreement with each other over at least an overlapping supersaturation range, sometimes nearly the entire S range from 0.02% to 1% S , or at least at some S value. Most of this file (the first set of columns) is from the new spectrometer, which operated at the higher S range. In a few cases this has been corrected at the lowest S (below 0.1% usually only below 0.05%) in order to agree with the old spectrometer, which operated mainly over a lower S range. The second set of columns for these files is data from the old instrument. This data is shown for periods when agreement between the two instruments was limited to a very narrow S range. The fact that the two instruments were not operating at the same rate, i.e., different time integration periods, requires this separate set of columns, time included. Trust the new spectrometer for high S and the old one for low S .

Reasons for there not being simultaneous ambient data from both instruments include calibrations, CCN volatility sampling, and size- S_c measurements. Measurements are usually invalid during cloud passes. Most of these have thus been edited out. Much of the time the new instrument used the interstitial inlet. Often this agreed with the old instrument, which always operated on the conventional inlet. But sometimes for reasons not yet determined there was disagreement between the two inlets. Some of this was probably due to clouds, perhaps ice clouds that do not always show up on the cloud probes. These periods have also been edited out of these data sets.

The other two files are during periods when only one instrument sampled ambient aerosol. The new instrument (e.g., JY12new.txt) is more valid for higher S ($> \sim 0.1\%$) whereas the old instrument is more valid for $S < \sim 0.1\%$.