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Preliminary data from the 2005 NOAA CLIVAR/Ocean Climate Observations

Readme for *etl_aerosol_stratus05.txt*

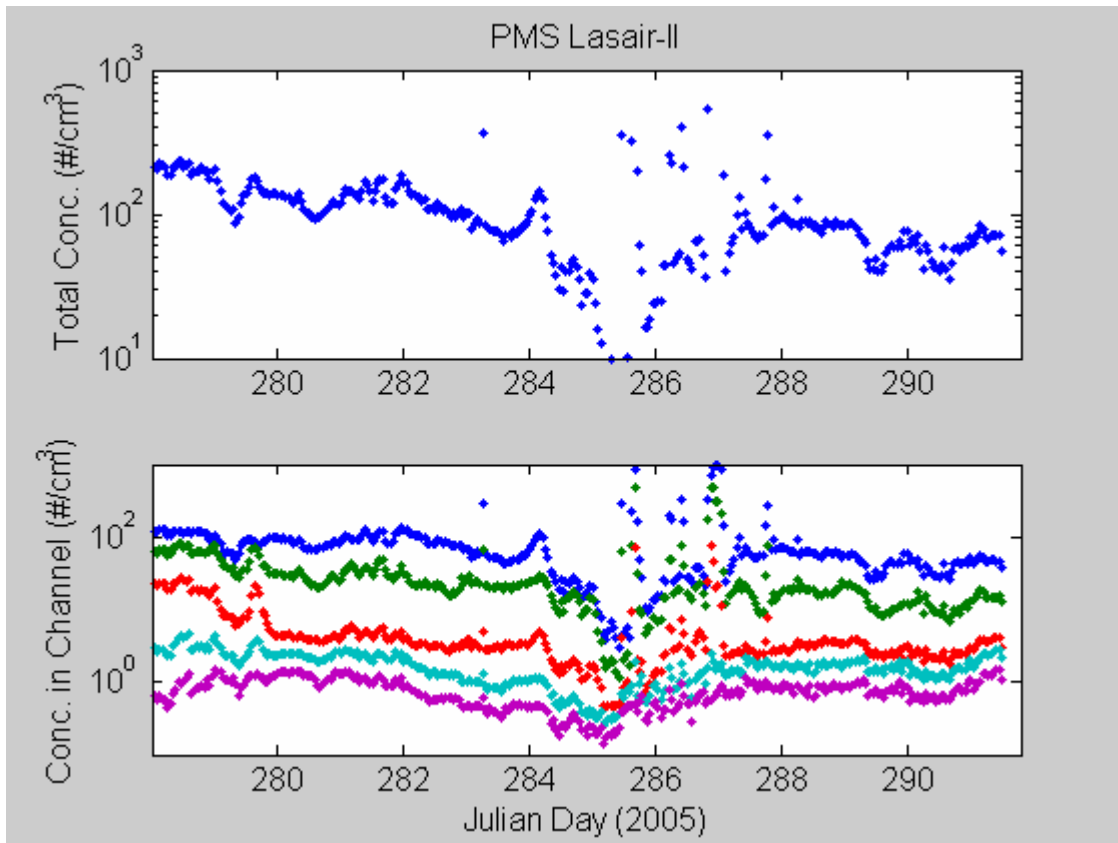
The data file *etl_aerosol_stratus05.txt* contains measurements of atmospheric aerosol counts. The instrument used is a Particle Measurement Systems (PMS) Lasair-II aerosol spectrometer. The Lasair-II draws air through an intake and uses scatter of laser light from individual particles to determine the size. Particles are counted in six size bins: 0.1-0.2, 0.2-0.3, 0.3-0.5, 0.5-1, 1-5, and greater than 5.0 μm diameter. The ETL system was mounted in the seatainer on the 02 deck with the intake on the upwind side of the container. The system ran at 1.0 cfm ($2.83 \times 10^4 \text{ cm}^3/\text{min}$) sample volume flow rate with a count deconcentrator that reduces the counts a factor of 10 (to prevent coincidence errors).

The file contains average aerosol counts accumulated in 6 sec samples. Since 6 sec is 0.1 minute, the aerosol concentration is related to the *average* counts obtained in 1-min by
Concentration = Counts/(2.8×10^4) * 10 * 0.1 (#/cm³)

The factor of 10 is the deconcentrator and the factor of 0.1 is the 6-sec sample. The aerosol spectral concentration is $dN/dr=C/dr$ where dr is the width of the size bin.

The columns in the file are:

1	Julian Day (2005)
2	Excel day number
3	Time (fraction of day)
4	Total counts
5	Size of channel 0 (0.1 – 0.2 micron)
6	Counts in channel 0
7	Size of channel 1 (0.2 – 0.3 micron)
8	Counts in channel 1
9	Size of channel 2 (0.3 – 0.5 micron)
10	Counts in channel 2
11	Size of channel 3 (0.5 – 1 micron)
12	Counts in channel 3
13	Size of channel 4 (1 – 5 micron)
14	Counts in channel 4
15	Size of channel 5 (5 – up micron)
17	Counts in channel 5



Aerosol concentrations from Lasair-II spectrometer for the Stratus 2005 cruise on the *Ronald H. Brown*. Upper panel: total number concentration for aerosols larger than 0.1 micron diameter. Lower panel: aerosol concentrations for 0.1-0.2 (blue), 0.2-0.3 (green), 0.3-0.5 (red), 0.5-1.0 (cyan), and 1.0-5.0 (magenta). Spikes are caused by ship's exhaust.