

C. Fairall, D. Wolfe

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Ceilometer cloud statistics files from the 2004 NOAA CLIVAR/Ocean Climate

Observations cruise aboard the NOAA Ship Ronald H. Brown

Readme for *ceilo_stratus04_time.txt* where time = 30s, 10-min or 1-hr

The program *Dana_ceilo7_epi_03.m* was run to process raw ceilometer daily files. This program reads all available files and writes a new file (*ceilo_stratus04_30s.txt*) that contains the basic cloud base height information:

- 1 Julian date
- 2 N, where N=number of cloud layers (0-3) or a code (4-5) for marginal clouds
- 3 Height of the first layer (NaN unless N>0)
- 4 Height of the second layer (NaN unless N>1)
- 5 Height of the third layer (NaN unless N>2)

The program then computes cloud statistics at 10-min and 60-min time resolution. New files are written on these statistics with the following data columns

The data file *ceilo_stratus04_10min.txt* and *ceilo_stratus04_1hr.txt*

- 1 Julian date
- 2 Number of samples
- 3 Number of clear samples
- 4 Number of one cloud layer samples
- 5 Number of multiple cloud layer samples
- 6 Number of samples with N=4, obscured
- 7 Number of samples with N=5, partially obscured
- 8 Clear fraction
- 9 Cloudy fraction
- 10 Cloudy fraction including obscured
- 11 Median cloud height (m)
- 12 Height with 16% clouds lower
- 13 Height with 16% clouds higher