TITLE: Aerosol size distribution integrals DMA, LDMA, OPC, APS

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1.0 DATA SET OVERVIEW:

Aerosol size distribution integrals measured by Differential Mobility Analyzer (DMA), Long Differential Mobility Analyzer (LDMA), Optical Particle Counter (OPC) and Aerodynamic Particle Sizers (APS1 and APS2) presented in the following diameter ranges (um) and time resolutions (sec):

Instrument	Dmin	Dmax	Dsub/coarse	Delta t
OPC	0.15	3	0.75	3
DMA	0.02	0.15		~85
LDMA	0.02	0.5		~85
APS	0.72	20		15

Collected on the NCAR C-130 in Aug-Sept, 2007 from Kiribati (Christmas) Island, Republic of Kiribati (Pacific Atmospheric Sulfur Experiment-PASE).

2.0 INSTRUMENT DESCRIPTION:

The aerosol size distribution measured inside C-130 with APS for mass-dependent sizing of 0.7 to 20 um diameter particles, thermally resolved DMA(40, 150, 300C), OPC(40, 150, 300, 400C) and LDMA aerosol size distributions.

3.0 DATA COLLECTION AND PROCESSING:

The air was sampled through the NCAR Inlet. The data have been corrected for the ambient temperature and pressure based on the ideal gas law. Data influenced by droplet shatter have been removed. The detailed data info can be found in files header.

4.0 DATA FORMAT:

Data for each flight is supplied in its own file. Filenames are structured as (for example): RF03_20070813T175221_DMA_v1.txt, RF03_20070813T175221_LDMA_v1.txt, RF03_20070813T175221_OPC_v1.txt, RF03_20070813T175221_APS_v1.txt (RAF flight number_start time_measured parameter_version . file type ASCII text).

Standard EOL data archive header information is first, followed by a NASA-NOAA header information style precluded by "REMARKS =" identifier.

EXAMPLE HEADER and 3 lines of data

1. DMA data

```
PI/DATA CONTACT = Antony Clarke, 1000 Pope Road, Honolulu, HI 96822; email: tclarke@soest.hawaii.edu; 808-956-6215
DATA COVERAGE = START: 20070813175234; STOP: 20070814023523 UTC
PLATFORM/SITE = C-130
INSTRUMENT = DMA
LOCATION = mobile
DATA VERSION = 1.0 (20080325)
REMARKS = Pacific Atmospheric Sulfur Experiment (PASE)
REMARKS = Sample Midpoint time yyyymmddhhmmss, UTC
REMARKS = Sample Midpoint time Matlab format, UTC
REMARKS = Sample Start time, seconds
REMARKS = Sample Stop time, seconds
REMARKS = Sample Midpoint time, seconds
REMARKS = intN_Unheated, cm-3
REMARKS = intA_Unheated, um2cm-3
REMARKS = intV_Unheated, um3cm-3
REMARKS = intN_150C, cm-3
REMARKS = intA_150C, um2cm-3
REMARKS = intV_150C, um3cm-3
REMARKS = intN_300C, cm-3
REMARKS = intA_300C, um2cm-3
REMARKS = intV_300C, um3cm-3
REMARKS = missing data NaN
REMARKS = NASA-NOAA HEADER INFORMATION FOLLOWS
REMARKS = 40 1001
REMARKS = Clarke, Antony
REMARKS = HiGEAR/University of Hawaii
REMARKS = Aerosol number, area and volume measured with DMA aboard NSF C-130
REMARKS = PASE
REMARKS = 1 1
REMARKS = 2007 08 04 2007 09 08
REMARKS = 0
REMARKS = Start_UTC, second
REMARKS = 11
REMARKS = 1 1 1 1 1 1 1 1 1 1 1
REMARKS = -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999
REMARKS = Stop_UTC, second
REMARKS = Mid_UTC, second
REMARKS = intN_Unheated, cm-3
REMARKS = intA_Unheated, um2cm-3
REMARKS = intV_Unheated, um3cm-3
REMARKS = intN_150C, cm-3
REMARKS = intA_150C, um2cm-3
REMARKS = intV_150C, um3cm-3
REMARKS = intN_300C, cm-3
REMARKS = intA_300C, um2cm-3
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REMARKS = intV_300C, um3cm-3
REMARKS = 0
REMARKS = 15
REMARKS = PI_CONTACT_INFO: Antony Clarke, 1000 Pope Road, Honolulu, HI 96822; email: tclarke@soest.hawaii.edu; 808-956-6215
REMARKS = PLATFORM: NSF C-130 aircraft
REMARKS = LOCATION: Lat, Lon, and Alt data in a separate data file
REMARKS = ASSOCIATED_DATA: N/A
REMARKS = INSTRUMENT_INFO: Aerosol size distributions were measured with a Differential Mobility Analyzer. The first three columns have the start, stop and mid times (UTC) of sampling, respectively. The remaining columns have the number, area and volume integrated over 20 - 150 nm. The data is corrected to the ambient temperature and pressure, not standard temperature and pressure. The air was sampled through the NCAR Inlet. To measure the aerosol volatility, the sample air was periodically directed to heaters set at 150 and 300 C before the DMA. The diameters represent the values under the dry instrument conditions (under 30%RH in most cases) and adjustment to the ambient humidity requires additional information on aerosol hygroscopicity.
REMARKS = DATA_INFO: Units are #/cm3 for number, um2/cm3 for area and um3/cm3 for volume.
REMARKS = UNCERTAINTY: N/A
REMARKS = DM_CONTACT_INFO: Vladimir Kapustin and Vera Brekhovskikh, Dept. of Oceanogarphy, University of Hawaii at Manoa, 1000 Pope Road, Honolulu, Hawaii 96822; 808-956-7777; kapustin@soest.hawaii.edu
REMARKS = PROJECT_INFO: PASE; 4 August - 8 September 2007, http://www.eol.ucar.edu/projects/pase/PASE_HomePage.html;
REMARKS = STIPULATIONS_ON_USE: N/A
REMARKS = OTHER_COMMENTS: N/A
REMARKS = REVISION: R0
REMARKS = R0: No comments for this revision
UTC MatlabTime   Start_UTC Stop_UTC Mid_UTC intN_Unheated intA_Unheated intV_Unheated intN_150C intA_150C intV_150C intN_300C intA_300C intV_300C
UTC UTC sec sec sec 1/cm3 um2/cm3 um3/cm3 1/cm3 um2/cm3 um3/cm3 1/cm3 um2/cm3 um3/cm3
20070813175234.0000 733267.7448379629 64344 64364 64354 2.992e+002 5.874e+000 1.011e-001 NaN NaN NaN NaN NaN NaN
20070813180413.0000 733267.7529282407 65043 65063 65053 3.255e+002 3.621e+000 4.690e-002 NaN NaN NaN NaN NaN NaN
20070813180541.0000 733267.7539467593 65131 65151 65141 2.923e+002 3.557e+000 4.782e-002 2.620e+002 3.288e+000 4.452e-002 2.094e+001 2.365e-001 3.078e-003

2. LDMA data

PI/DATA CONTACT = Antony Clarke, 1000 Pope Road, Honolulu, HI 96822; email: tclarke@soest.hawaii.edu; 808-956-6215
DATA COVERAGE = START: 20070813175317; STOP: 20070814023556 UTC
PLATFORM/SITE = C-130
INSTRUMENT = LDMA
LOCATION = mobile
DATA VERSION = 1.0 (20080325)
REMARKS = Pacific Atmospheric Sulfur Experiment (PASE)
REMARKS = Sample Midpoint time yyyymmddhhmmss, UTC
REMARKS = Sample Midpoint time Matlab format, UTC
REMARKS = Sample Start time, seconds
REMARKS = Sample Stop time, seconds
REMARKS = Sample Midpoint time, seconds
REMARKS = intN, cm-3
REMARKS = intA, um2cm-3
REMARKS = intV, um3cm-3
REMARKS = missing data NaN
REMARKS = NASA-NOAA HEADER INFORMATION FOLLOWS
REMARKS = 38 1001
REMARKS = Clarke, Antony
REMARKS = HiGEAR/University of Hawaii
REMARKS = Number, area and volume of unheated aerosols measured with the Long Differential Mobility Analyzer aboard NSF C-130
REMARKS = PASE
REMARKS = 1 1
REMARKS = 2007 08 04 2007 09 08
REMARKS = 0
REMARKS = Start_UTC, second
REMARKS = 5
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REMARKS = -9999 -9999 -9999 -9999 -9999
REMARKS = Sample Midpoint time yyyymmddhhmmss, UTC
REMARKS = Sample Midpoint time Matlab format, UTC
REMARKS = Sample Start time, seconds
REMARKS = Stop_UTC,second

REMARKS = Midpoint_UTC, second
REMARKS = intN, cm-3
REMARKS = intA, um2cm-3
REMARKS = intV, um3cm-3
REMARKS = 0
REMARKS = 16
REMARKS = PI_CONTACT_INFO: Antony Clarke, 1000 Pope Road, Honolulu, HI 96822; email: tclarke@soest.hawaii.edu; 808-956-6215
REMARKS = PLATFORM: NSF C-130 aircraft
REMARKS = LOCATION: Lat, Lon, and Alt data in a separate data file
REMARKS = ASSOCIATED_DATA: N/A
REMARKS = INSTRUMENT_INFO: Aerosol size distributions were measured with a Long Differential Mobility Analyzer. The first three columns have the start, stop and mid times (UTC) of sampling, respectively. The 4th to 6th columns have the number, area and volume integrated over 20 - 500 nm. The data is for unheated particles and corrected to the ambient temperature and pressure, not standard temperature and pressure. The air was sampled through the NCAR Solid Diffuser Inlet. The diameters represent the values under the dry instrument conditions (under 30%RH in most cases) and adjustment to the ambient humidity requires additional information on aerosol hygroscopicity.
REMARKS = Pressure (altitude) transmission efficiency corrections have not been completed yet.
REMARKS = DATA_INFO: Units are #/cm3 for number, um2/cm3 for area and um3/cm3 for volume.
REMARKS = UNCERTAINTY: N/A
REMARKS = DM_CONTACT_INFO: Vladimir Kapustin and Vera Brekhovskikh, Dept. of Oceanogarphy, University of Hawaii at Manoa, 1000 Pope Road, Honolulu, Hawaii 96822; 808-956-7777; kapustin@soest.hawaii.edu
REMARKS = PROJECT_INFO: PASE; 4 August - 8 September 2007, http://www.eol.ucar.edu/projects/pase/PASE_HomePage.html;
REMARKS = STIPULATIONS_ON_USE: N/A
REMARKS = OTHER_COMMENTS: N/A
REVISION: R0
REMARKS = R0: No comments on this revision.
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UTC UTC sec sec sec 1/cm3 um2/cm3 um3/cm3
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20070813175608.0000 733267.7473148148 64558 64578 64568 3.191e+002 1.566e+001 5.326e-001

3. OPC data

PI/DATA CONTACT = Antony Clarke, 1000 Pope Road, Honolulu, HI 96822; email: tclarke@soest.hawaii.edu; 808-956-6215
DATA COVERAGE = START: 20070813175222; STOP: 20070814023644 UTC
PLATFORM/SITE = C-130
INSTRUMENT = OPC
LOCATION = mobile
DATA VERSION = 1.0 (20080325)
REMARKS = Pacific Atmospheric Sulfur Experiment (PASE)
REMARKS = Sample Midpoint time yyyymmddhhmmss, UTC
REMARKS = Sample Midpoint time Matlab format, UTC
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REMARKS = Sample Midpoint time, seconds
REMARKS = intN_Unheated, cm-3
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REMARKS = intV_Unheated, um3cm-3
REMARKS = intNsubmicron_Unheated, cm-3
REMARKS = intAsubmicron_Unheated, um2cm-3
REMARKS = intVsubmicron_Unheated, um3cm-3
REMARKS = intNsupermicron_Unheated, cm-3
REMARKS = intAsupermicron_Unheated, um2cm-3
REMARKS = intVsupermicron_Unheated, um3cm-3
REMARKS = intN_150C, cm-3
REMARKS = intA_150C, um2cm-3
REMARKS = intV_150C, um3cm-3
REMARKS = intNsubmicron_150C, cm-3
REMARKS = intAsubmicron_150C, um2cm-3
REMARKS = intVsubmicron_150C, um3cm-3
REMARKS = intNsupermicron_150C, cm-3
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REMARKS = intVsupermicron_150C, um3cm-3
REMARKS = intN_300C, cm-3
REMARKS = intA_300C, um2cm-3
REMARKS = intV_300C, um3cm-3
REMARKS = intNsubmicron_300C, cm-3

REMARKS = intAsubmicron_300C, um2cm-3
REMARKS = intVsubmicron_300C, um3cm-3
REMARKS = intNsupermicron_300C, cm-3
REMARKS = intAsupermicron_300C, um2cm-3
REMARKS = intVsupermicron_300C, um3cm-3
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REMARKS = intA_400C, um2cm-3
REMARKS = intV_400C, um3cm-3
REMARKS = intNsubmicron_400C, cm-3
REMARKS = intAsubmicron_400C, um2cm-3
REMARKS = intVsubmicron_400C, um3cm-3
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REMARKS = intVsupermicron_400C, um3cm-3
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REMARKS = missing data NaN
REMARKS = NASA-NOAA HEADER INFORMATION FOLLOWS
REMARKS = 70 1001
REMARKS = Clarke, Antony
REMARKS = HiGEAR/University of Hawaii
REMARKS = Aerosol number, area and volume measured with OPC aboard NSF C-130
REMARKS = PASE
REMARKS = 1 1
REMARKS = 2007 08 04 2007 09 08
REMARKS = 0
REMARKS = Start_UTC, second
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REMARKS = 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
REMARKS = -9999
REMARKS = Stop_UTC, second
REMARKS = Mid_UTC, second
REMARKS = intN_Unheated, cm-3
REMARKS = intA_Unheated, um2cm-3
REMARKS = intV_Unheated, um3cm-3
REMARKS = intNsubmicron_Unheated, cm-3
REMARKS = intAsubmicron_Unheated, um2cm-3
REMARKS = intVsubmicron_Unheated, um3cm-3
REMARKS = intNsupermicron_Unheated, cm-3
REMARKS = intAsupermicron_Unheated, um2cm-3
REMARKS = intVsupermicron_Unheated, um3cm-3
REMARKS = intN_150C, cm-3
REMARKS = intA_150C, um2cm-3
REMARKS = intV_150C, um3cm-3
REMARKS = intNsubmicron_150C, cm-3
REMARKS = intAsubmicron_150C, um2cm-3
REMARKS = intVsubmicron_150C, um3cm-3
REMARKS = intNsupermicron_150C, cm-3
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REMARKS = intVsupermicron_150C, um3cm-3
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REMARKS = intAsubmicron_300C, um2cm-3
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REMARKS = intNsupermicron_300C, cm-3
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REMARKS = intVsupermicron_300C, um3cm-3
REMARKS = intN_400C, cm-3
REMARKS = intA_400C, um2cm-3
REMARKS = intV_400C, um3cm-3
REMARKS = intNsubmicron_400C, cm-3
REMARKS = intAsubmicron_400C, um2cm-3
REMARKS = intVsubmicron_400C, um3cm-3
REMARKS = intNsupermicron_400C, cm-3
REMARKS = intAsupermicron_400C, um2cm-3
REMARKS = intVsupermicron_400C, um3cm-3

REMARKS = instrumentRH, %
REMARKS = STP_multiplier
REMARKS = 0
REMARKS = 16
REMARKS = PI_CONTACT_INFO: Antony Clarke, 1000 Pope Road, Honolulu, HI 96822; email: tclarke@soest.hawaii.edu; 808-956-6215
REMARKS = PLATFORM: NSF C-130 aircraft
REMARKS = LOCATION: Lat, Lon, and Alt data in a separate data file
REMARKS = ASSOCIATED_DATA: N/A
REMARKS = INSTRUMENT_INFO: Size distributions were obtained with an optical particle counter, sizing based upon calibration with PSL spheres (a refractive index of 1.588) up to 2 um and glass beads (1.54) above that. Because these optically effective size distributions include effects of shape they are most useful for modeling optical properties. Adjustments to aerodynamic or geometric sizes require additional information on shape, density and refractive index. The total, submicron, and supermicron data are integrated over 0.15 - 3 um, 0.15 - 0.75 um, and 0.75 - 3 um, respectively. The data is corrected to the ambient temperature and pressure, not standard temperature and pressure. Use the STP multiplier, given in the last column, for conversion. The air was sampled through the NCAR Inlet. To measure the aerosol volatility, the sample air was periodically directed to heaters set at 150, 300 and 400 C before the OPC. The data have been shifted to the unheated scan within 60 seconds for the ease of taking differences. In doing so the heated size distributions were scaled using the scattering coefficient at 550 nm for total particles measured simultaneously with the TSI nephelometer.
REMARKS = Caution is advised in using individual values (averaged over 30 seconds) as counting statistics need to be considered. We recommend longer averaging when possible.
REMARKS = DATA_INFO: Units are #/cm3 for all number integrals, um2/cm3 for area integrals and um3/cm3 for volume integrals.
REMARKS = UNCERTAINTY: N/A
REMARKS = DM_CONTACT_INFO: Vladimir Kapustin and Vera Brekhovskikh, Dept. of Oceanography, University of Hawaii at Manoa, 1000 Pope Road, Honolulu, Hawaii 96822; 808-956-7777; kapustin@soest.hawaii.edu
REMARKS = PROJECT_INFO: PASE; 4 August - 8 September 2007, http://www.eol.ucar.edu/projects/pase/PASE_HomePage.html;
REMARKS = STIPULATIONS_ON_USE: N/A
REMARKS = OTHER_COMMENTS: N/A
REMARKS = REVISION: R0
REMARKS = R0: No comments for this revision
UTC MatlabTime   Start_UTC Stop_UTC Mid_UTC intN_Unheated intA_Unheated intV_Unheated intNsubmicron_Unheated intAsubmicron_Unheated intVsubmicron_Unheated intNsupermicron_Unheated intAsupermicron_Unheated intVsupermicron_Unheated intN_150C intA_150C intV_150C intNsubmicron_150C intAsubmicron_150C intVsubmicron_150C intNsupermicron_150C intAsupermicron_150C intVsupermicron_150C intN_300C intA_300C intV_300C intNsubmicron_300C intAsubmicron_300C intVsubmicron_300C intNsupermicron_300C intAsupermicron_300C intVsupermicron_300C intN_400C intA_400C intV_400C intNsubmicron_400C intAsubmicron_400C intVsubmicron_400C intNsupermicron_400C intAsupermicron_400C intVsupermicron_400C instrumentRH STP_multiplier
UTC UTCsec sec sec 1/cm3 um2/cm3 um3/cm3 1/cm3 um2/cm3 um3/cm3 1/cm3 um2/cm3 um3/cm3 1/cm3 um2/cm3 um3/cm3 1/cm3 um2/cm3 um3/cm3 1/cm3 um2/cm3 um3/cm3 1/cm3 um2/cm3 um3/cm3 1/cm3 um2/cm3 um3/cm3 1/cm3 um2/cm3 um3/cm3 1/cm3 um2/cm3 um3/cm3 1/cm3 um2/cm3 um3/cm3 1/cm3 um2/cm3 um3/cm3   RH STP
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20070813180712.0000 733267.7550000000 65214 65244 65232 4.960 0.634 0.030 4.947 0.593 0.024 0.013 0.041 0.007 NaN NaN NaN NaN NaN NaN 0.015 0.162 0.052 0.202 0.035 0.002 0.202 0.035 0.002 0.000 0.000 0.000 0.857 0.152 0.011 0.844 0.112 0.004 0.013 0.040 0.007 12 1.365
20070813180916.0000 733267.7564351852 65338 65370 65356 5.417 0.711 0.037 5.405 0.658 0.026 0.012 0.052 0.011 0.990 0.224 0.020 0.976 0.163 0.008 0.014 0.060 0.012 NaN NaN NaN NaN NaN NaN NaN NaN NaN 0.747 0.113 0.005 0.747 0.113 0.005 0.000 0.000 0.000 11 1.364

4. APS data

PI/DATA CONTACT = Antony Clarke, 1000 Pope Road, Honolulu, HI 96822; email: tclarke@soest.hawaii.edu; 808-956-6215
DATA COVERAGE = START: 20070813175316; STOP: 20070814023532 UTC
PLATFORM/SITE = C-130
INSTRUMENT = APS1 and APS2
LOCATION = mobile
DATA VERSION = 1.0 (20080325)
REMARKS = Pacific Atmospheric Sulfur Experiment (PASE)
REMARKS = Sample Midpoint time yyyymmddhhmmss, UTC
REMARKS = Sample Midpoint time Matlab format, UTC
REMARKS = Sample Start time, seconds
REMARKS = Sample Stop time, seconds
REMARKS = Sample Midpoint time, seconds
REMARKS = APS1intNtot, #/cm3
REMARKS = APS1intAtot, um2/cm3
REMARKS = APS1intVtot, um3/cm3
REMARKS = Instrment1RH, %

REMARKS = APS2intNtot, #/cm3
REMARKS = APS2intAtot, um2/cm3
REMARKS = APS2intVtot, um3/cm3
REMARKS = Instrment2RH, %
REMARKS = missing data NaN
REMARKS = NASA-NOAA HEADER INFORMATION FOLLOWS
REMARKS = 43 1001
REMARKS = Clarke, Antony
REMARKS = HiGEAR/University of Hawaii
REMARKS = Aerosol number, area and volume measured with the Aerodynamic Particle Sizer aboard NSF C-130
REMARKS = PASE
REMARKS = 1 1
REMARKS = 2007 08 04 2007 09 08
REMARKS = 0
REMARKS = Start_UTC, seconds
REMARKS = 6
REMARKS = 1 1 1 1 1 1
REMARKS = -9999 -9999 -9999 -9999 -9999 -9999
REMARKS = Sample Midpoint time yyyymmddhhmmss, UTC
REMARKS = Sample Midpoint time Matlab format, UTC
REMARKS = Sample Start time, seconds
REMARKS = Stop_UTC,second
REMARKS = Midpoint_UTC, second
REMARKS = APS1intNtot, #/cm3
REMARKS = APS1intAtot, um2/cm3
REMARKS = APS1intVtot, um3/cm3
REMARKS = Instrment1RH, %
REMARKS = APS2intNtot, #/cm3
REMARKS = APS2intAtot, um2/cm3
REMARKS = APS2intVtot, um3/cm3
REMARKS = Instrment2RH, %
REMARKS = 0
REMARKS = 16
REMARKS = PI_CONTACT_INFO: Antony Clarke, 1000 Pope Road, Honolulu, HI 96822; email: tclarke@soest.hawaii.edu; 808-956-6215
REMARKS = PLATFORM: NSF C-130 aircraft
REMARKS = LOCATION: Lat, Lon, and Alt data in a separate data file
REMARKS = ASSOCIATED_DATA: N/A
REMARKS = INSTRUMENT_INFO: The aerodynamic size distributions were measured with Aerodynamic Particle Sizer (TSI 3321). The integrated number, area and volume have been corrected for the ambient temperature and pressure, not at standard temperature and pressure. The air was sampled through the NCAR Solid Diffuser Inlet (APS1) and the NCAR LTI Inlet (APS2).
REMARKS = APSint(N,A,V)tot integrals were calculated for aerodynamic diameters 0.72um<=Dp<=20um.
REMARKS = DATA_INFO: Units are #/cm3 for number, um2/cm3 for area and um3/cm3 for volume.
REMARKS = UNCERTAINTY: N/A
REMARKS = DM_CONTACT_INFO: Vladimir Kapustin and Vera Brekhovskikh, Dept. of Oceanogarphy, University of Hawaii at Manoa, 1000 Pope Road, Honolulu, Hawaii 96822; 808-956-7777; kapustin@soest.hawaii.edu
REMARKS = PROJECT_INFO: PASE; 4 August - 8 September 2007, http://www.eol.ucar.edu/projects/pase/PASE_HomePage.html;
REMARKS = STIPULATIONS_ON_USE: N/A
REMARKS = OTHER_COMMENTS: N/A
REMARKS = REVISION: R0
REMARKS = R0: No comments for this revision
UTC MatlabTime   Start_UTC Stop_UTC Mid_UTC APS1intNtot APS1intAtot APS1intVtot Instrument1RH   APS2intNtot APS2intAtot APS2intVtot Instrument2RH
UTC UTC sec sec sec 1/cm3 um2/cm3 um3/cm3 RH   1/cm3 um2/cm3 um3/cm3 RH
20070813175316.0000 733267.7453240741 64389 64404 64396 4.184e+000 3.256e+001 1.215e+001 NaN NaN NaN NaN 57
20070813175331.0000 733267.7454976852 64404 64419 64411 4.513e+000 3.769e+001 1.483e+001 49 NaN NaN NaN 57
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5.0 DATA REMARKS
6.0 REFERENCES