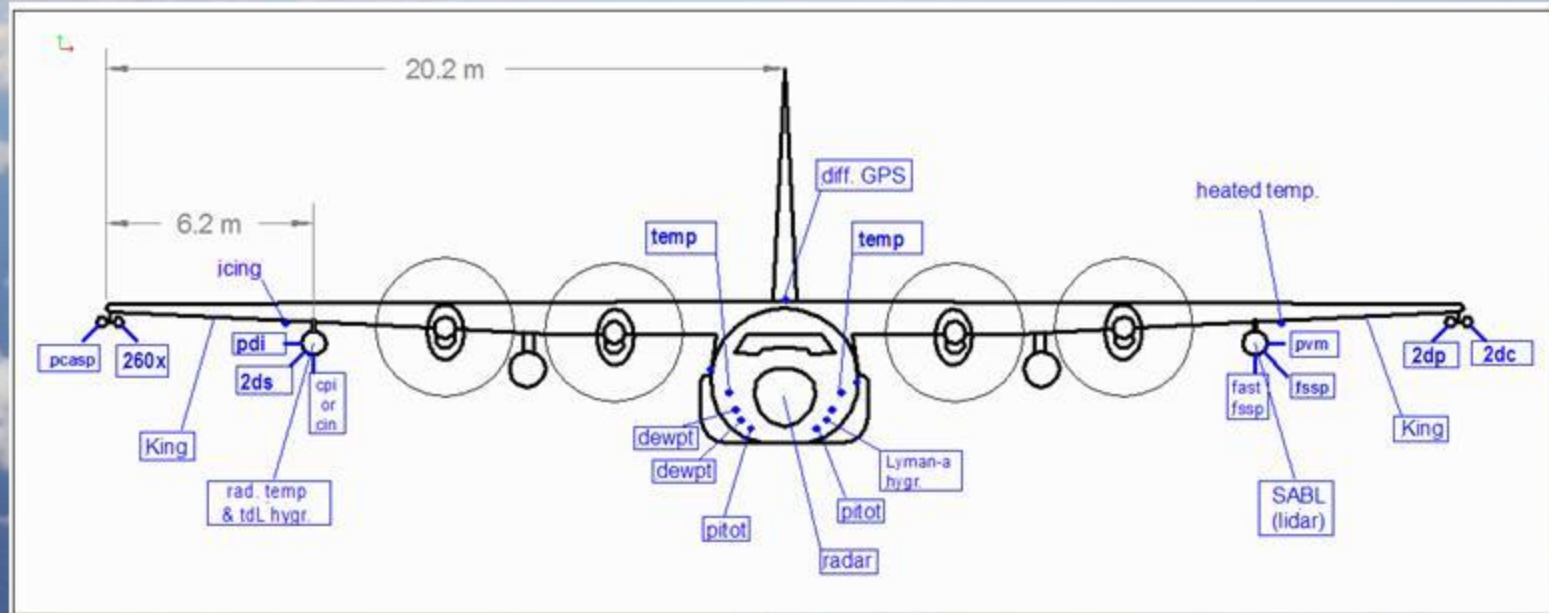


RAF cloud particle data

Rogers, Schanot, Stith, Jensen & RAF technical staff

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SPP-100 FSSP OAP-260X OAP-2DC OAP-2DP



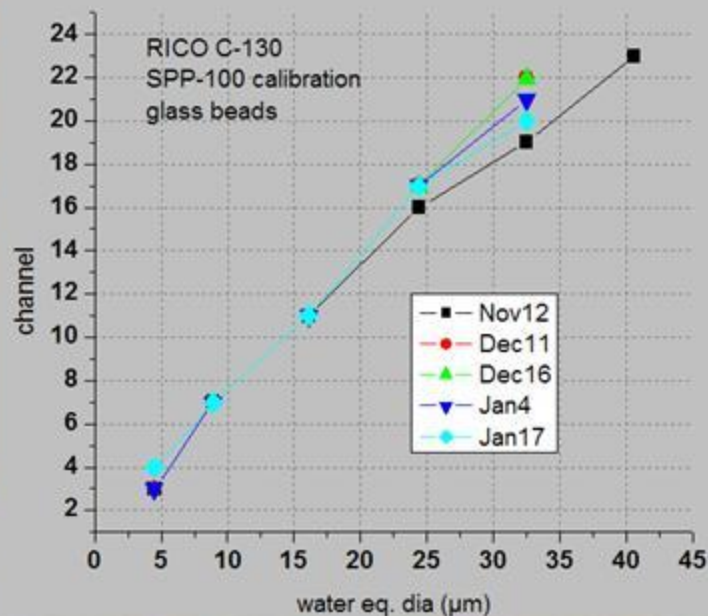
PMS probes:

- *calibrations & maintenance*
- *failures*
- *splash artifacts*
- *derived values*

Status:

- *data available in netcdf & 2d files*

SPP-100 FSSP



particle size distribution & conc
 ~ 2 to $47 \mu\text{m}$ dia (30 bins)

problems:

- *probe sleeping RF-05*
- *probe dead RF-18 (end), RF-19*

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SPP-100 FSSP → *11 derived values + size distr.*

AS100_LPC	<u>array</u> FSSP-100 counts per bin
CONCF_LPC	FSSP-100 Concentration (all cells)
DBARF_LPC	FSSP-100 Mean Particle Diameter
FREF_LPC	FSSP-100 Laser Reference Voltage
FRNG_LPC	FSSP-100 Size Range Category
FTMP_LPC	FSSP-100 Housekeeping Data
OVFLW_LPC	SPP-100 AtoD Converter Overflow/Overrange
PLWCF_LPC	FSSP-100 Water/Ice Content
REFFF_LPC	FSSP-100 Effective Radius
REJAT_LPC	SPP-100 Average Transit Rejected Particles
REJDOF_LPC	Particles Rejected (Outside Depth-of-Field))
TCNTF_LPC	FSSP-100 Total Counts (all cells)

OAP-260X

size distribution & conc

- *50-620 μm*

calibrations

- *spinning disk*

problems

- *spurious counts in clear air RF-15, 17*



OAP-260X → *size dist. + 4 derived values*

CONC6_RWI	260X Concentration (all cells)
DBAR6_RWI	260X Mean Particle Diameter
PLWC6_RWI	260X Water/Ice Content
TCNT6_RWI	260X Total Counts (all cells)

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OAP-2DC *and* OAP-2D-P

size distribution & concentration

- *50-800+ μm (2DC)*
- *200-6400+ μm (2DP)*

calibrate

- *targets on spinning disk*

problems:

- *poor sensitivity < $\sim 150 \mu\text{m}$ (2DC)*
- *splash artifacts in rain/drizzle (both)*

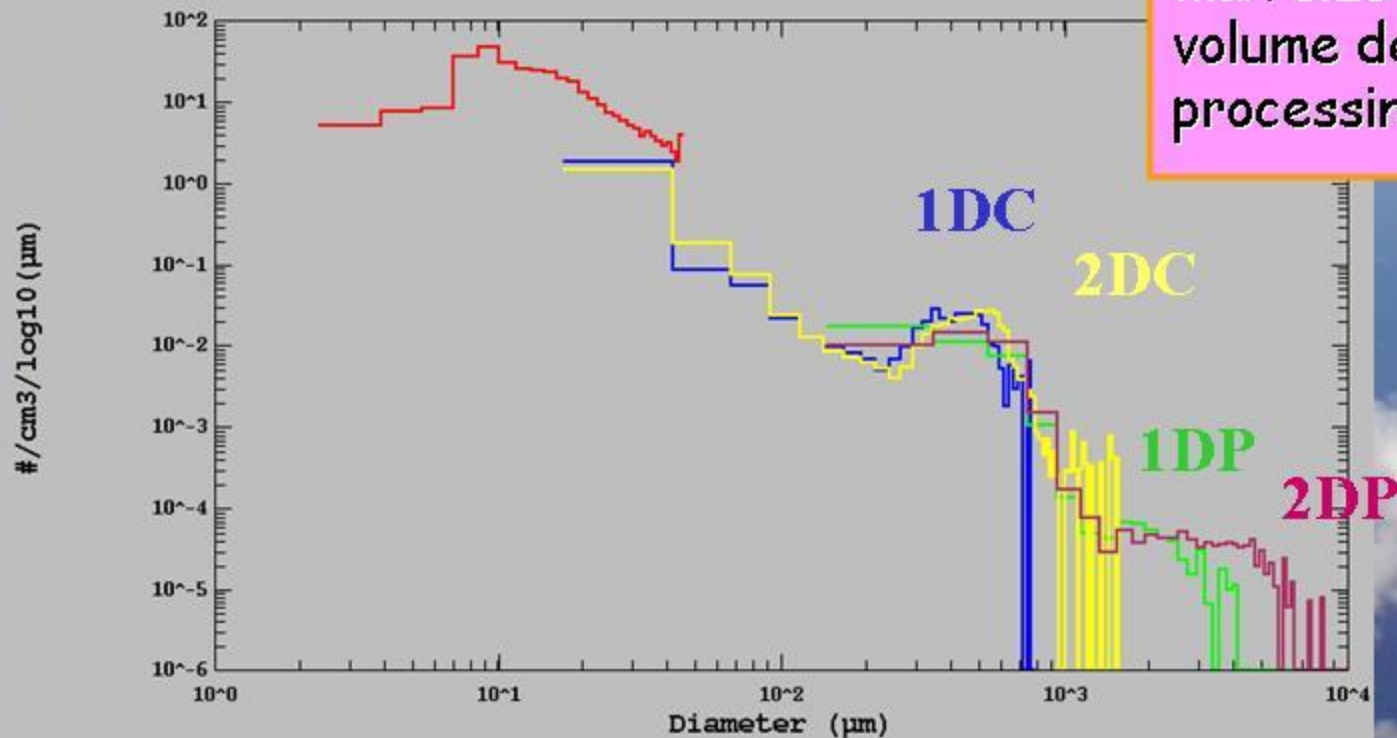
OAP-2DC → 11 derived values

<i>A1DC_LWO1, A2DC_LWO2</i>	<i>array counts per bin</i>
<i>CONC1DC_LWO1</i>	<i>2D-C Concentration, 260X Emulation (all cells)</i>
<i>CONC2C_LWO</i>	<i>2D-C Concentration</i>
<i>CONC2DC_LWO2</i>	<i>2D-C Concentration, Reconstruction (all cells)</i>
<i>DBAR1DC_LWO1</i>	<i>2D-C Mean Particle Diameter, 260X Emulation</i>
<i>DBAR2DC_LWO2</i>	<i>2D-C Mean Particle Diameter, Reconstruction</i>
<i>DT1DC_LWO1</i>	<i>PMS-2D Cloud Probe Dead Time</i>
<i>DT2DC_LWO2</i>	<i>PMS-2D Cloud Probe Dead Time</i>
<i>PLWC1DC_LWO1</i>	<i>2D-C Water/Ice Content, 260X Emulation</i>
<i>PLWC2DC_LWO2</i>	<i>2D-C Water/Ice Content, Reconstruction</i>
<i>REFF2DC_LWO1</i>	<i>No title</i>
<i>SHDORC_LWO</i>	<i>2D-C Shadow OR Counts</i>

emulation options

OAP-2DC/P → *sample volume*

RICO, Flight #rf16
01/18/2005, 14:59:00 - 15:00:00, 60 second average



max size & sample volume depend on processing option

2DP_LW12
2DC_LW02
1DP_LW11
1DC_LW01
S100_LPC

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