

Individual Particle Studies

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Samples discussed here:

C-130, giant nuclei slides, particles caught on conductive carbon
adhesive

Dian Point, Jan. 2005 – 3-stage impactor

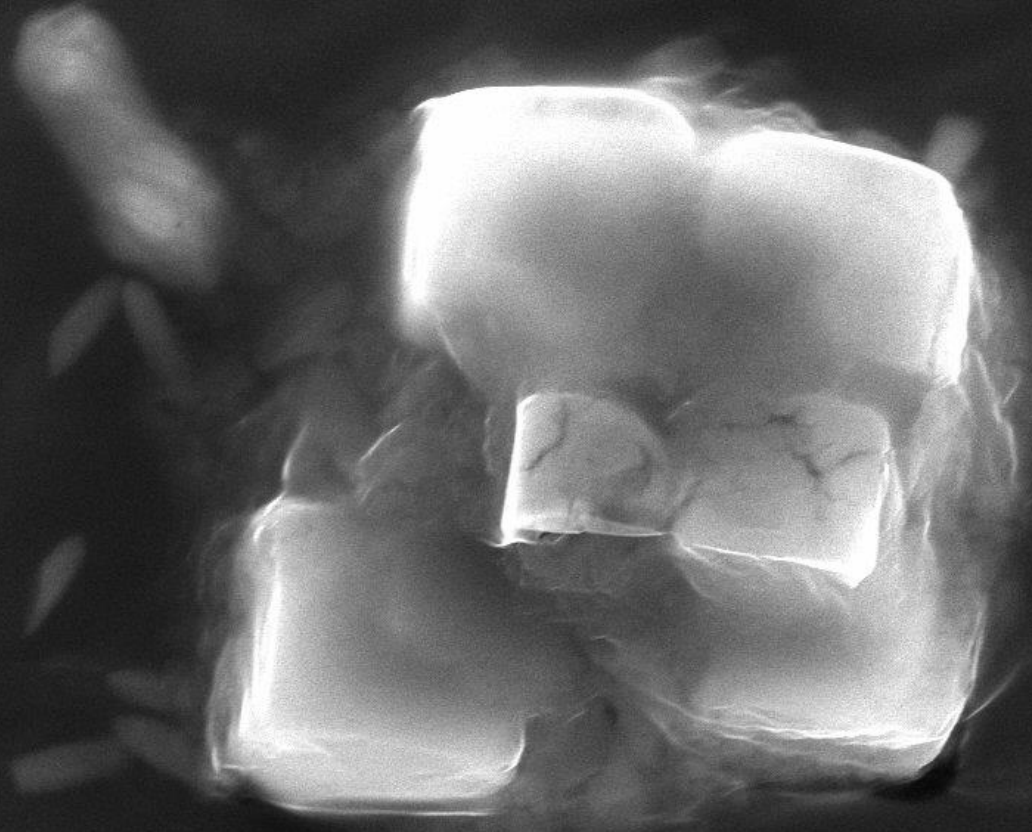
GIANT nuclei slide data

(data in plots not checked yet –
buyer beware)



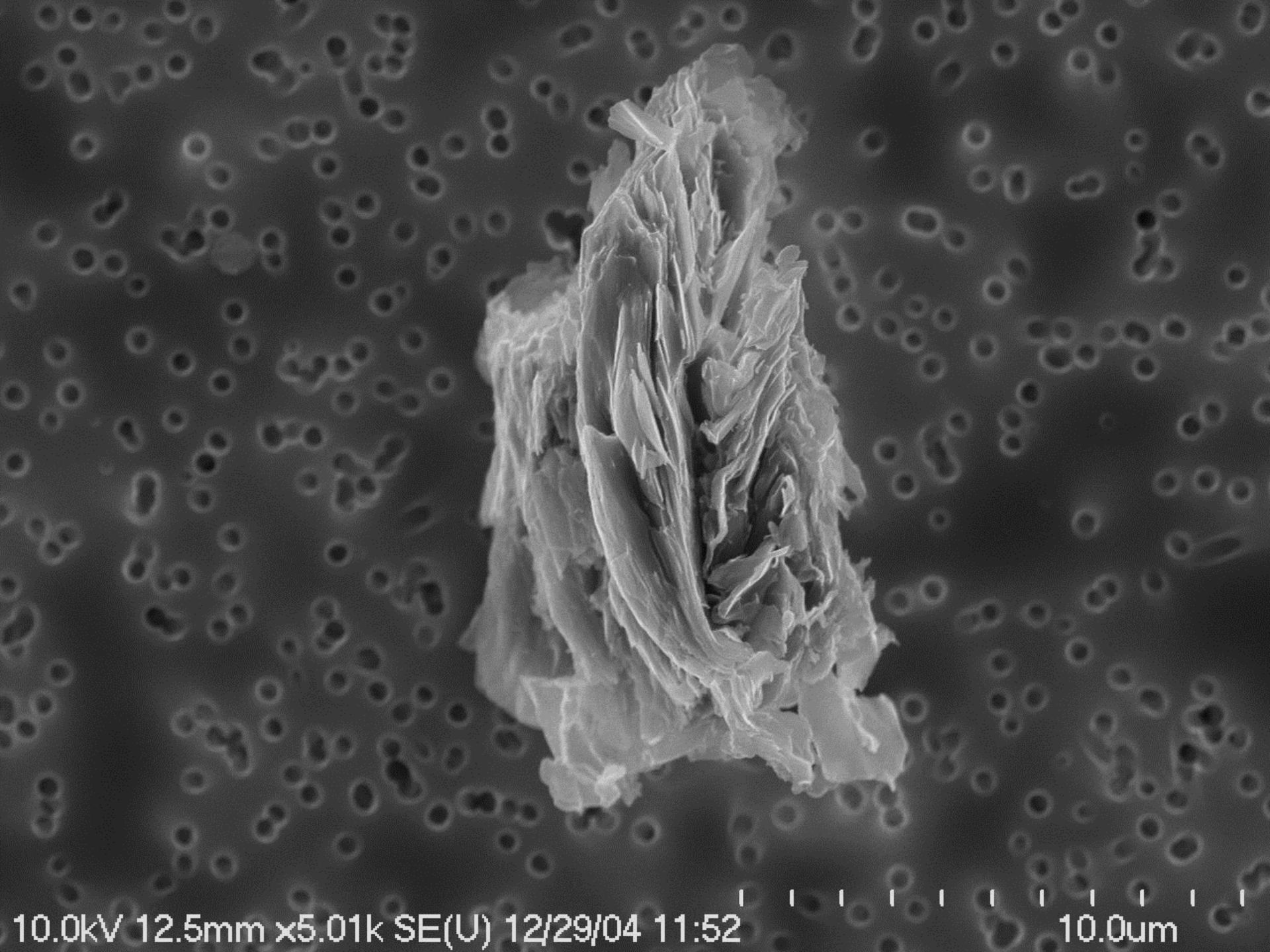
15.0kV 12.6mm x2.50k SE(U) 1/13/06 14:14

20.0um



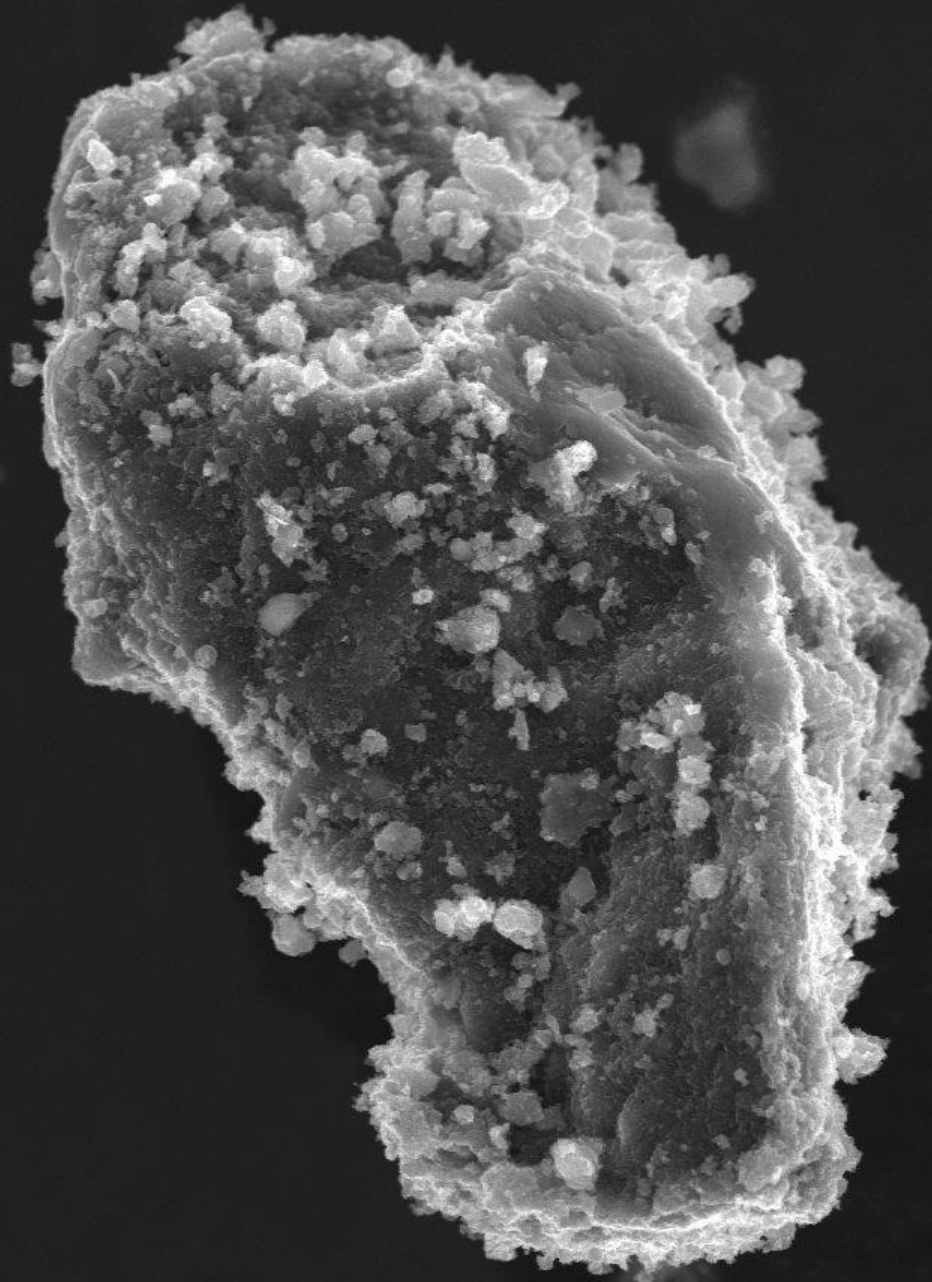
15.0kV 12.8mm x5.01k SE(M) 1/13/06 15:45

10.0um



10.0kV 12.5mm x5.01k SE(U) 12/29/04 11:52

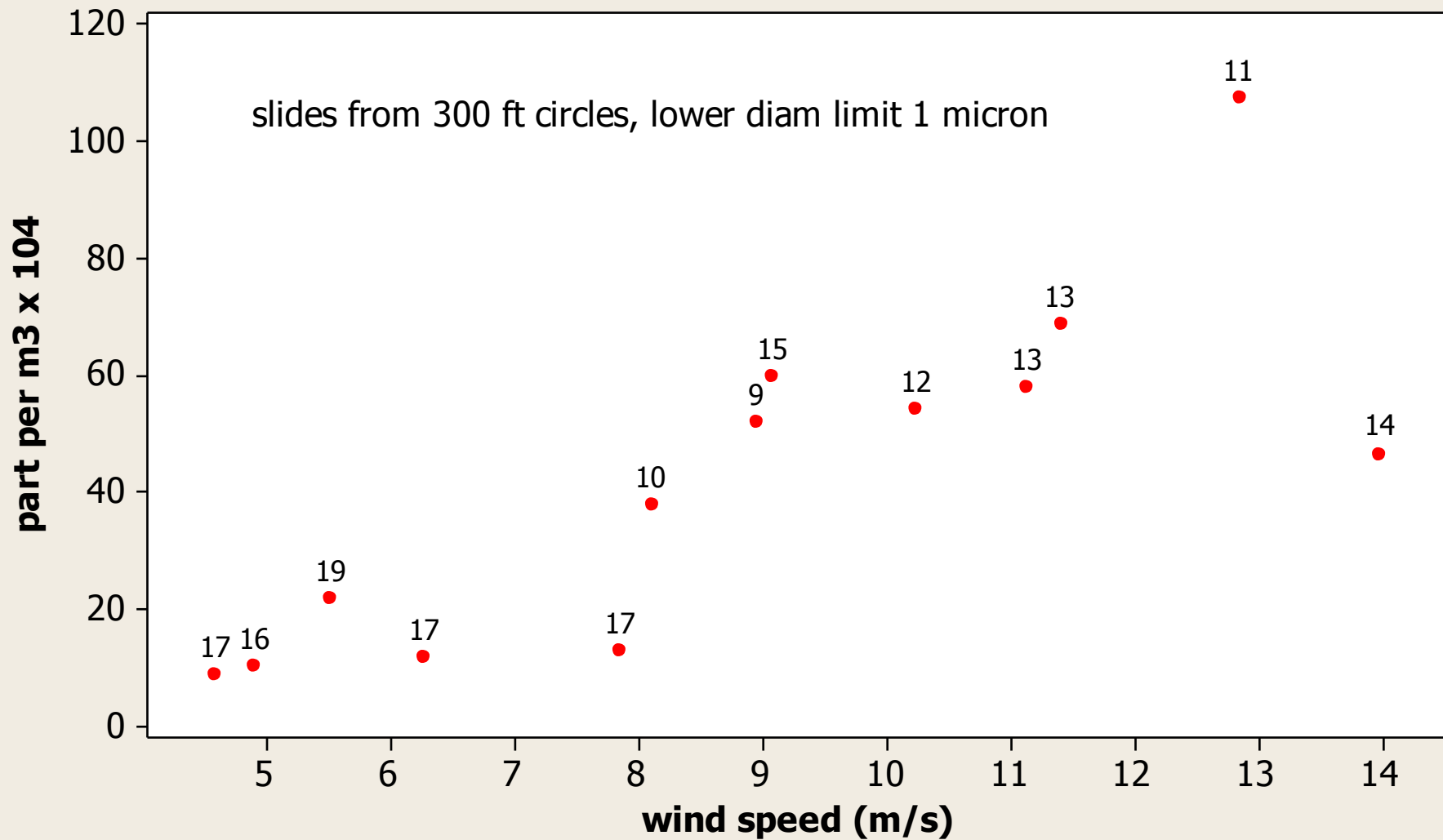
10.0um



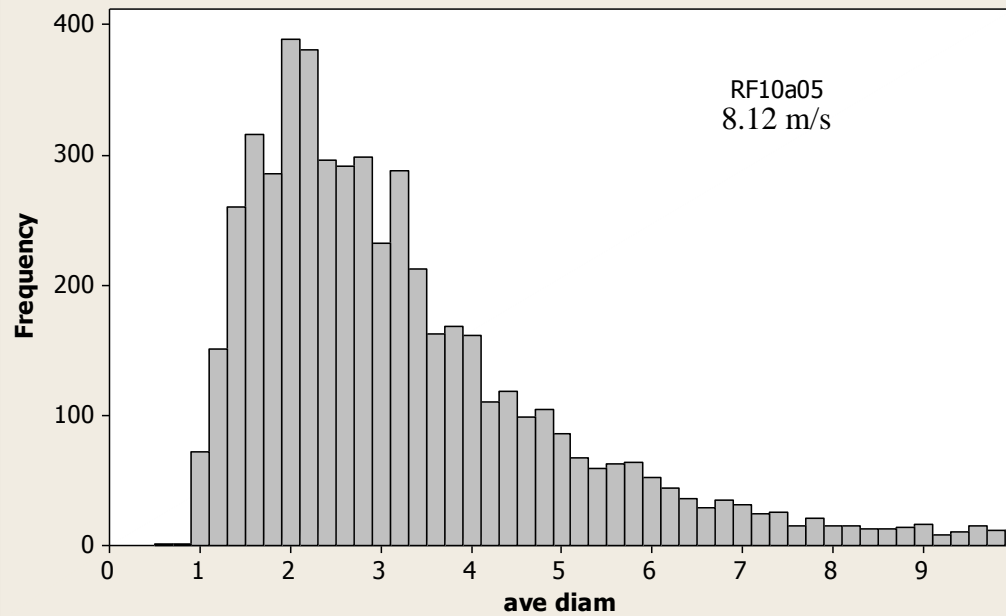
15.0kV 12.8mm x1.50k SE(M) 1/13/06 15:23

30.0um

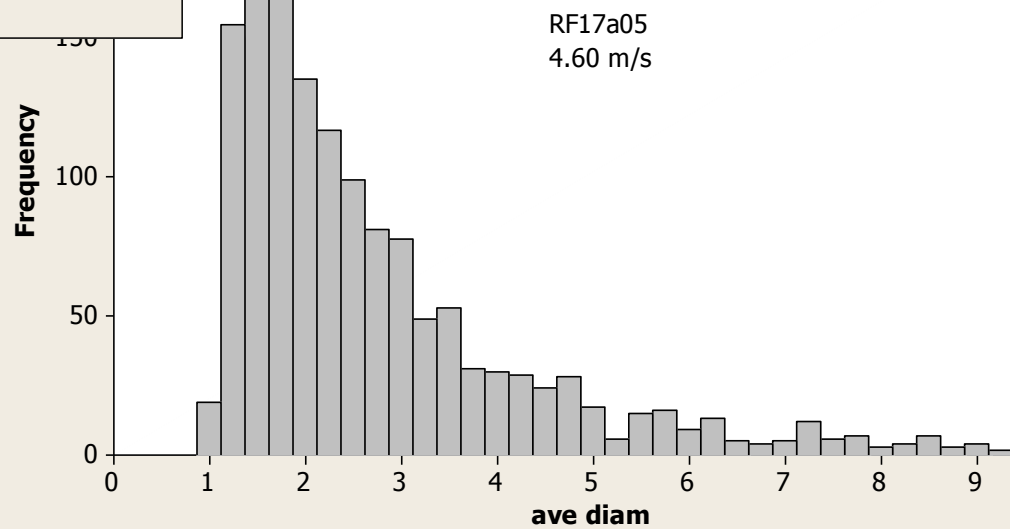
Scatterplot of particles per m³ x 10⁴ vs wind speed



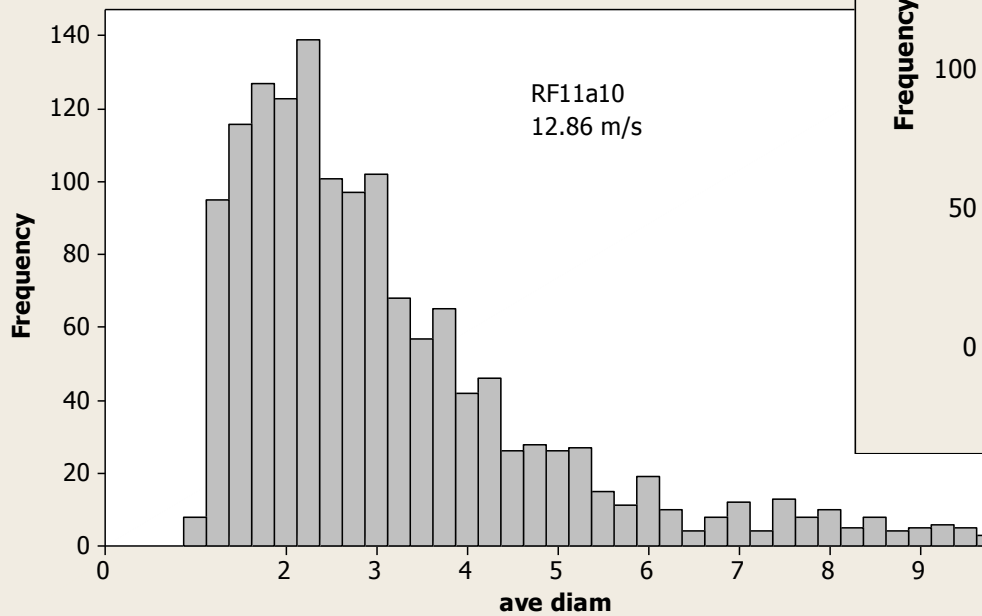
Histogram of ave diam

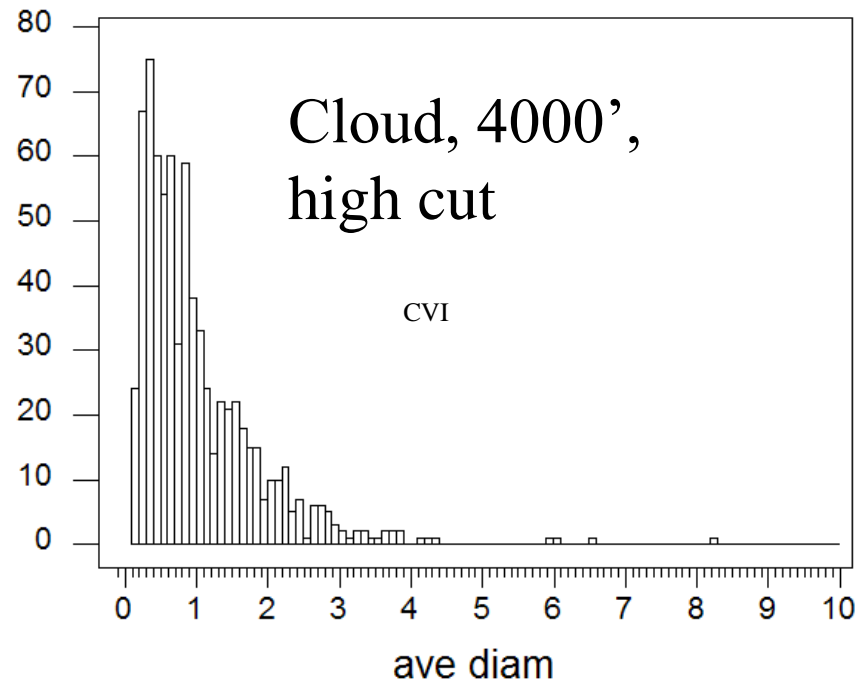
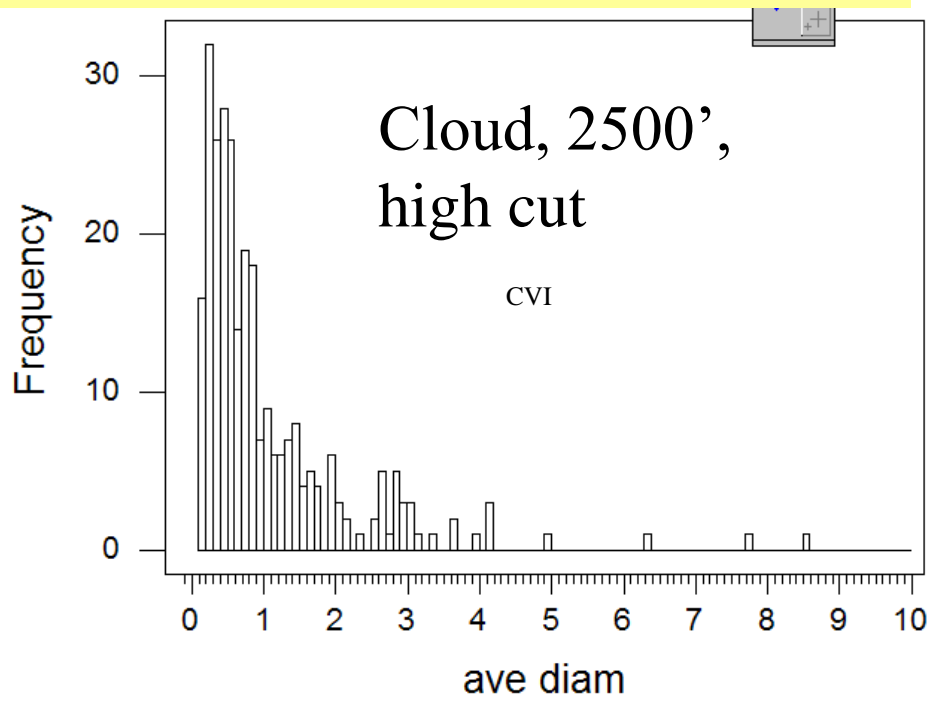
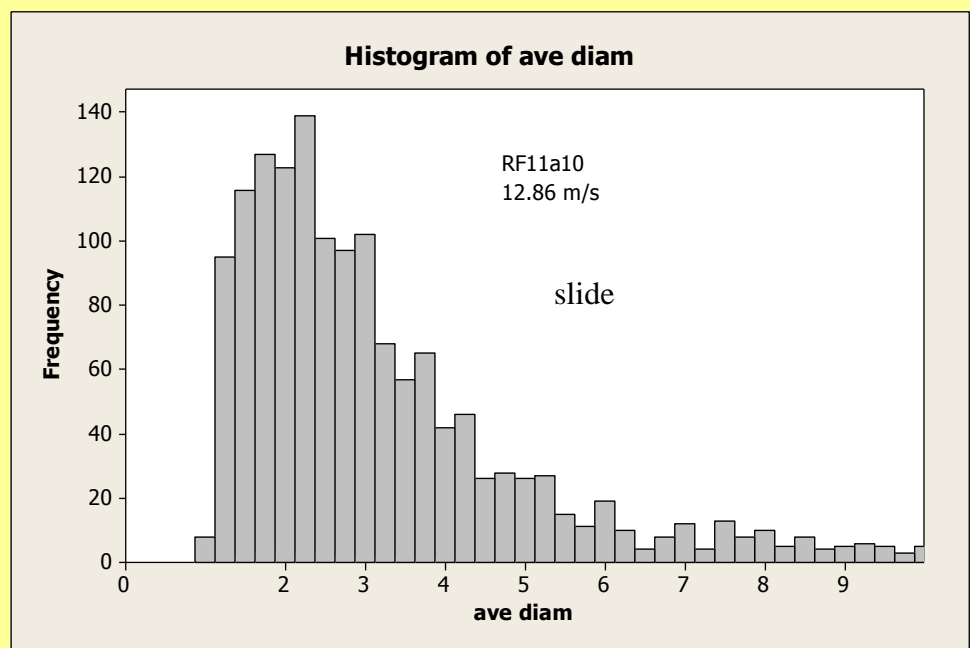
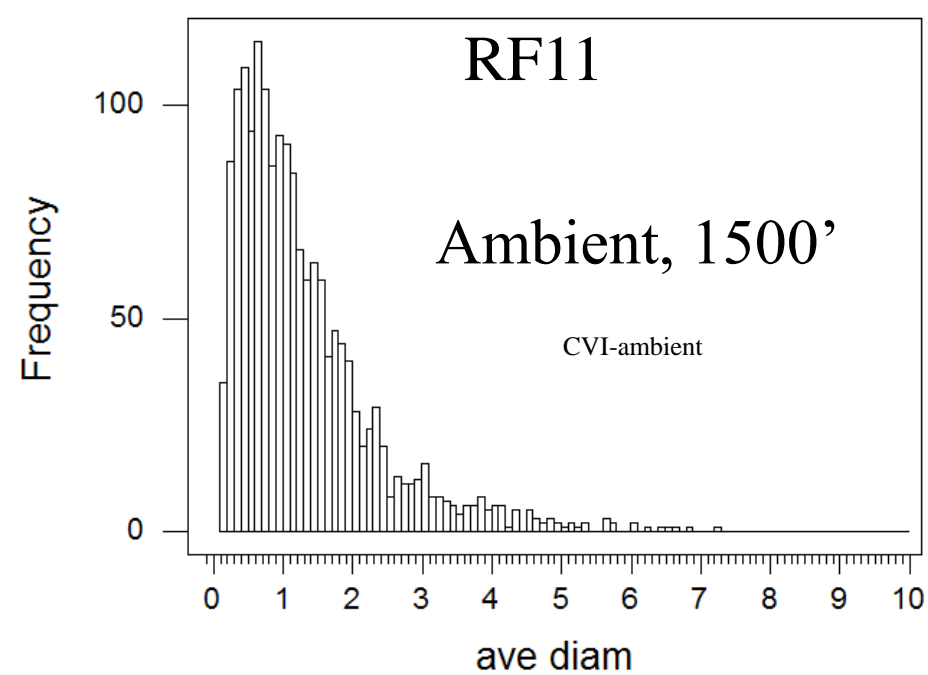


Histogram of ave diam



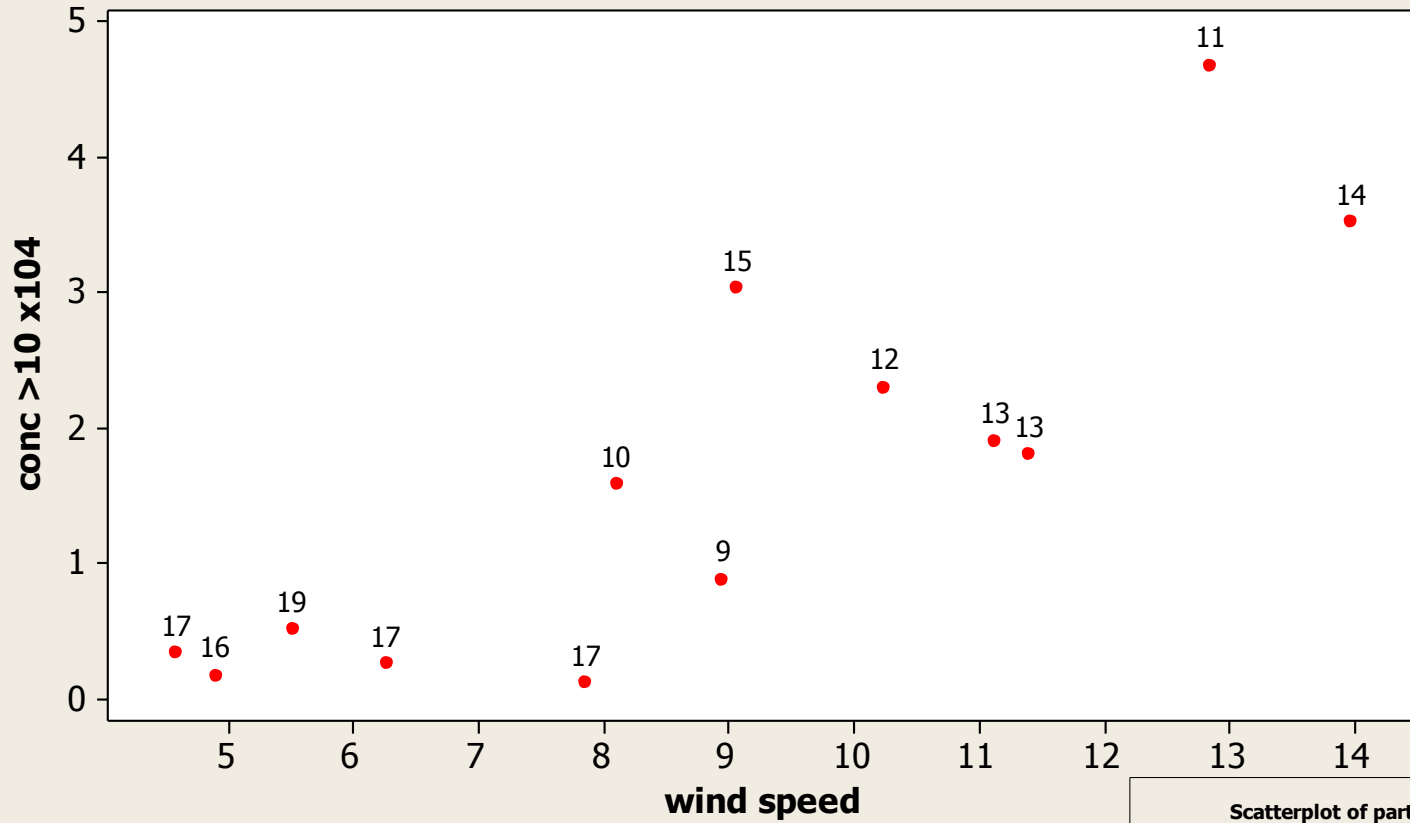
Histogram of ave diam



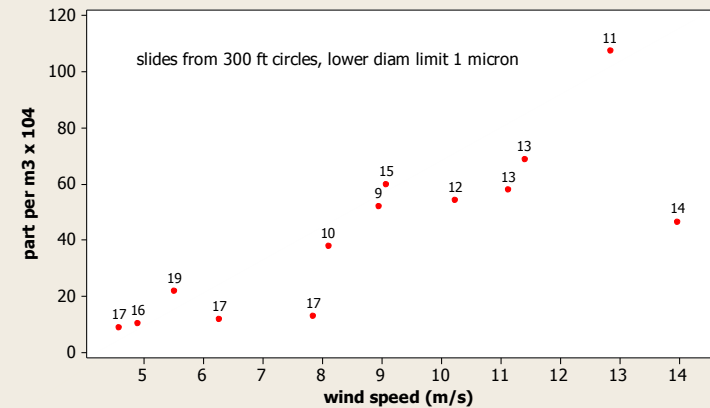


RICO slides, 300 ft circles

Concentration of particles with average diameters >10 microns vs wind speed

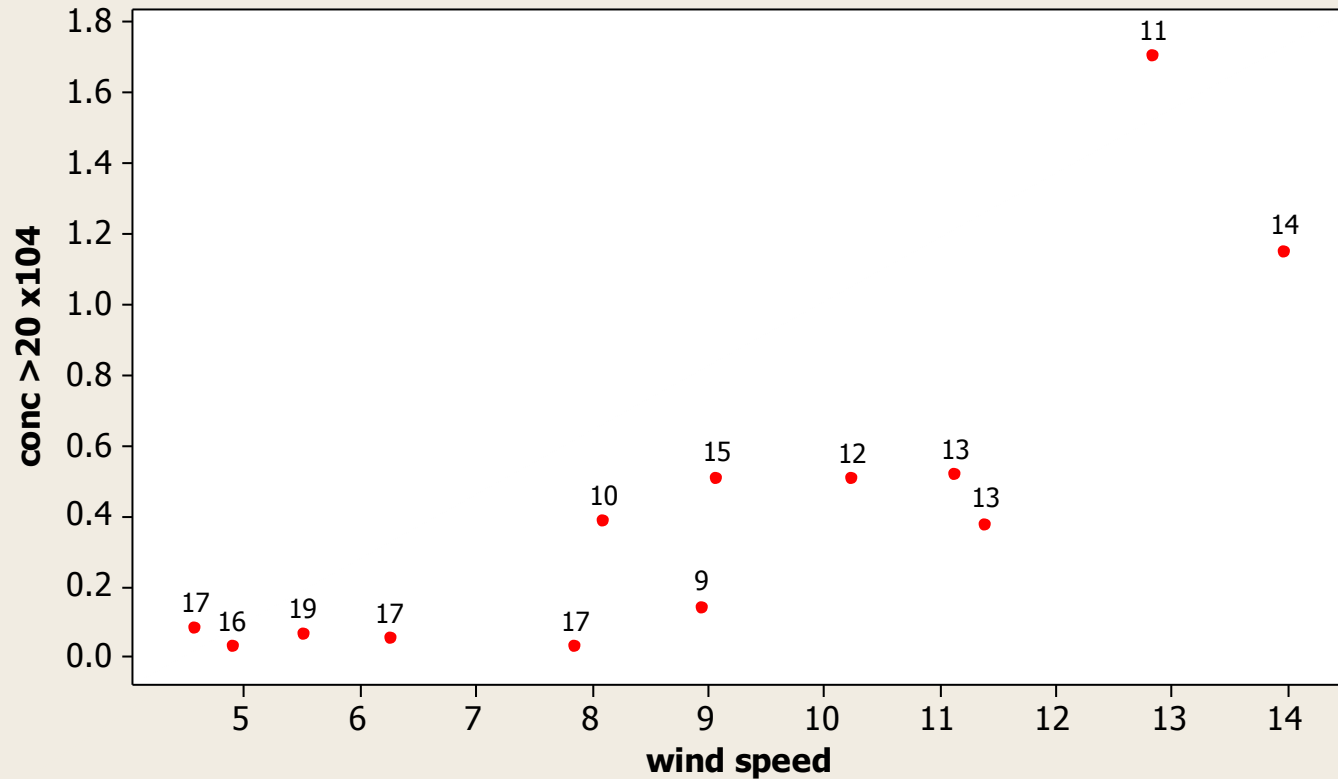


Scatterplot of particles per m³ x 10⁴ vs wind speed

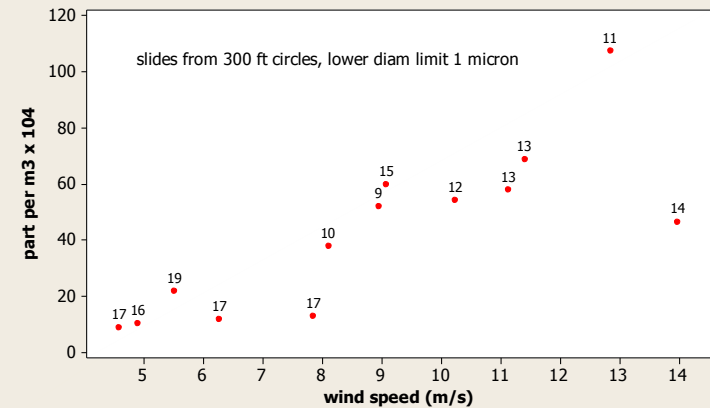


RICO slides, 300 ft circles

Concentration of particles with average diameters > 20 microns vs wind speed



Scatterplot of particles per m³ x 10⁴ vs wind speed



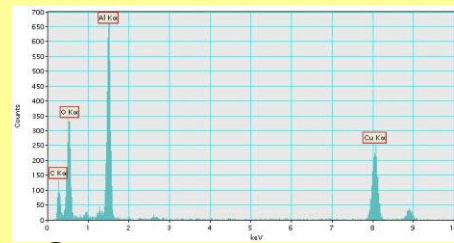
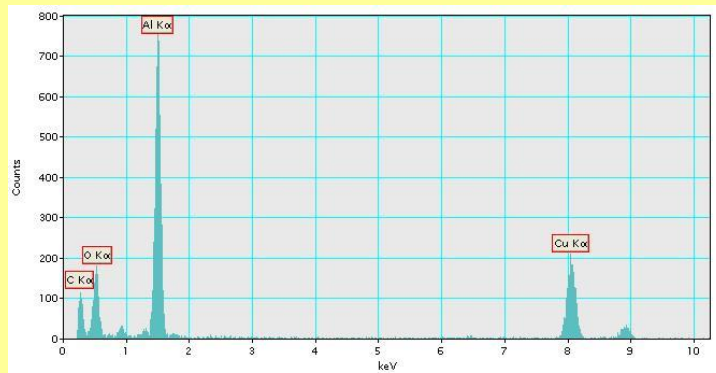
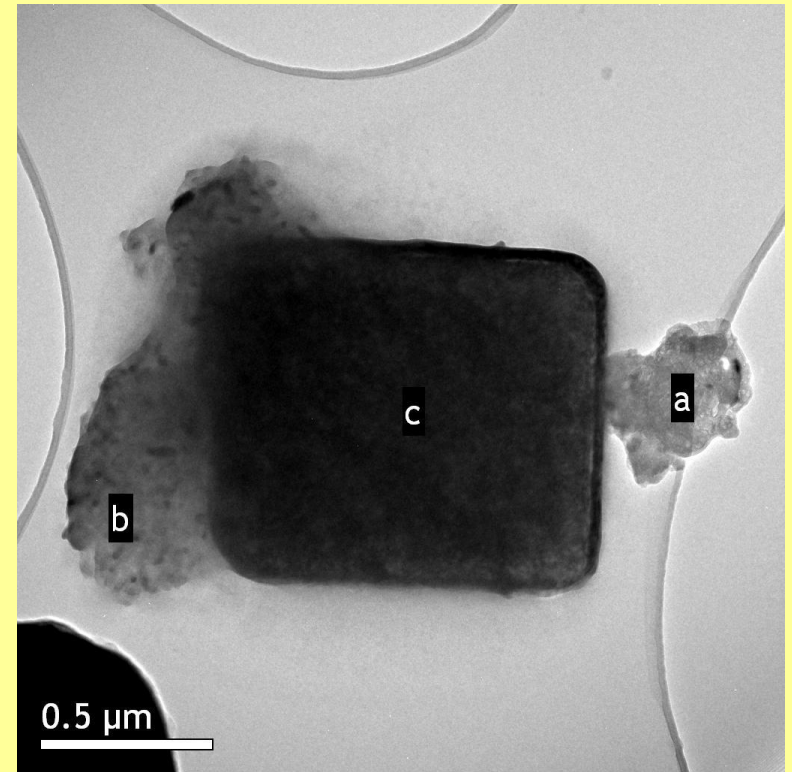
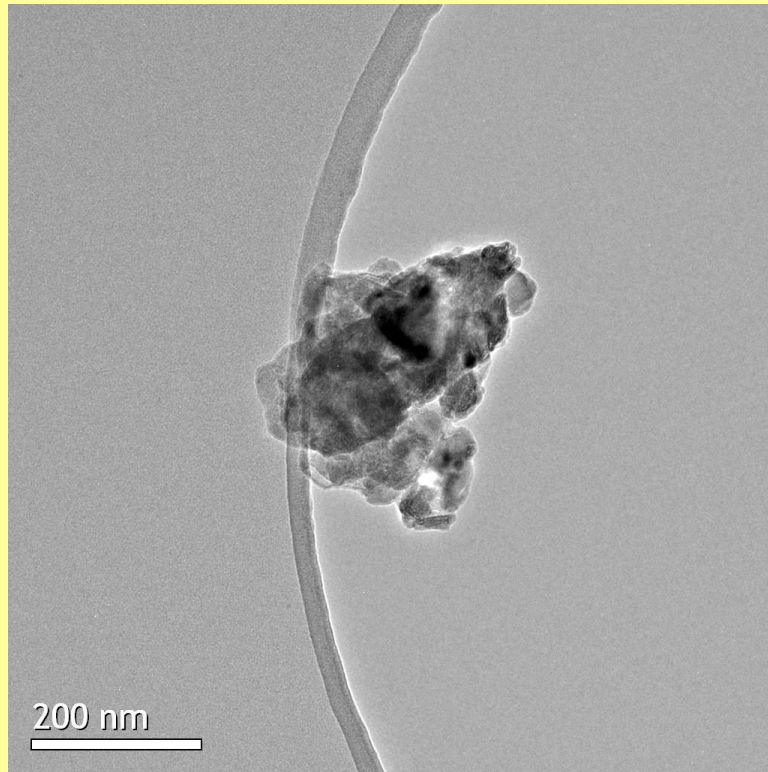
RF13

slide label	Wind speed (m/s)	Altitude (m)	mean ave. diam.	total per m3 x 104	conc >10 x104	conc >20 x104
050112a11	11.42	56	3.23	68.46	1.785	0.370
050112a62	11.15	68	3.74	57.47	1.892	0.510
050112a60		386	3.22	46.55	1.062	0.238
050112a23		750	3.03	44.05	0.796	0.204
050112a50		1978	3.37	12.51	0.398	0.065

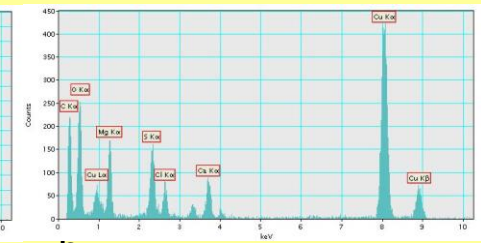
Advection of polluted air into study area?

1/21 14:01 for 5 mins, size cut 2.

Alumina or Al hydroxide; solitary (left), aggregated with compound b and NaCl c on right.



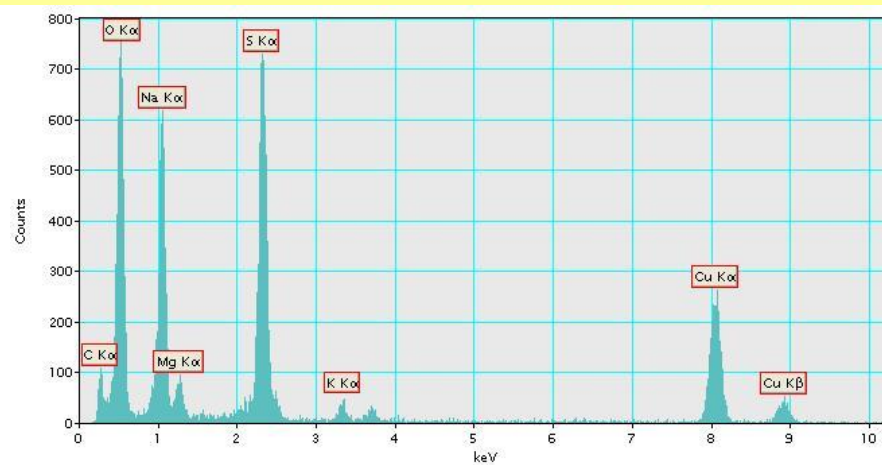
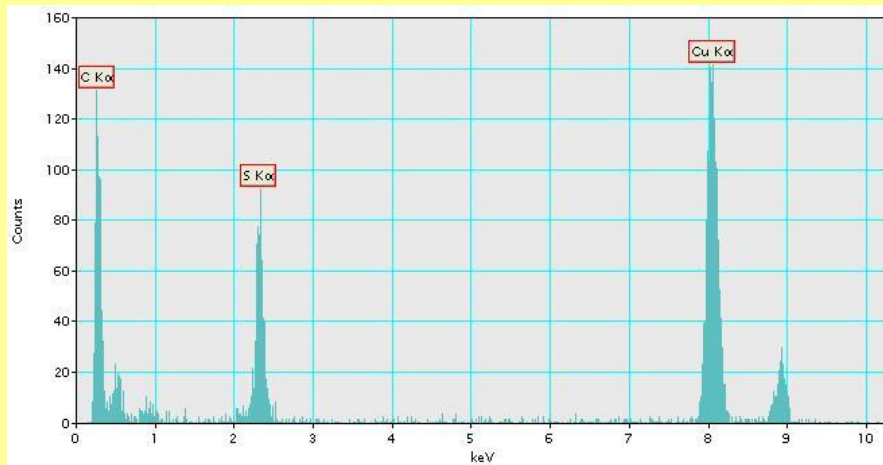
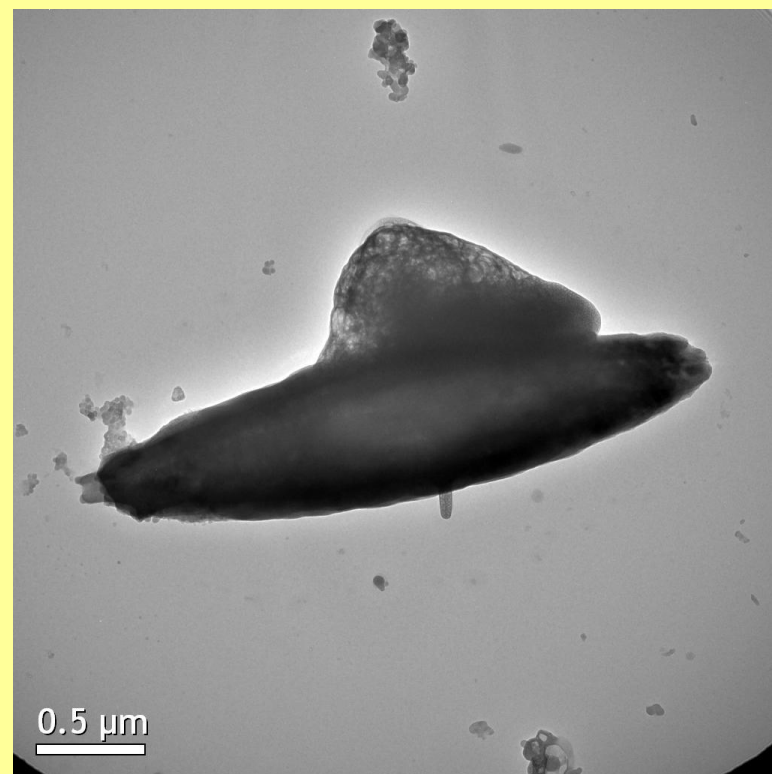
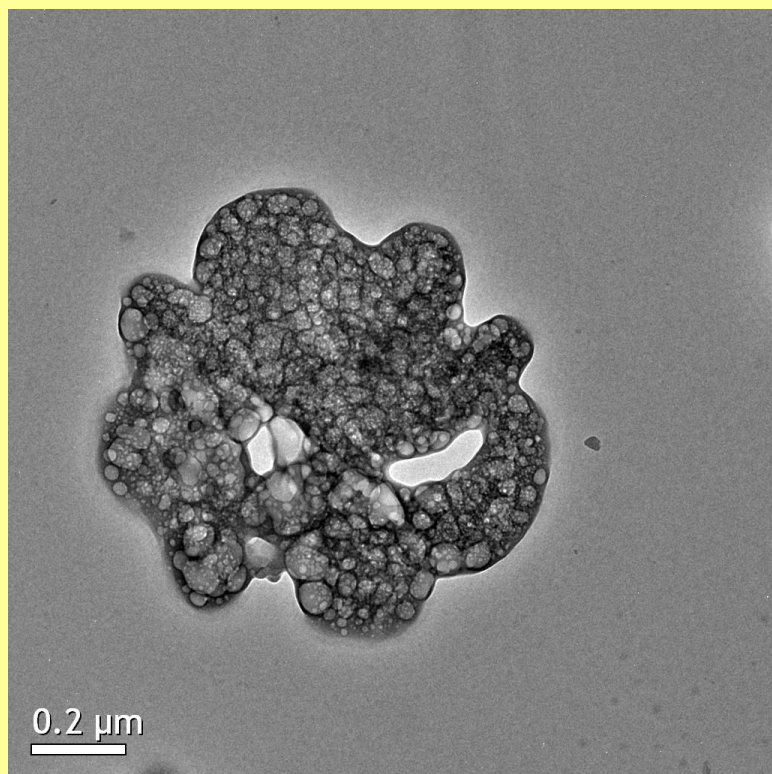
a

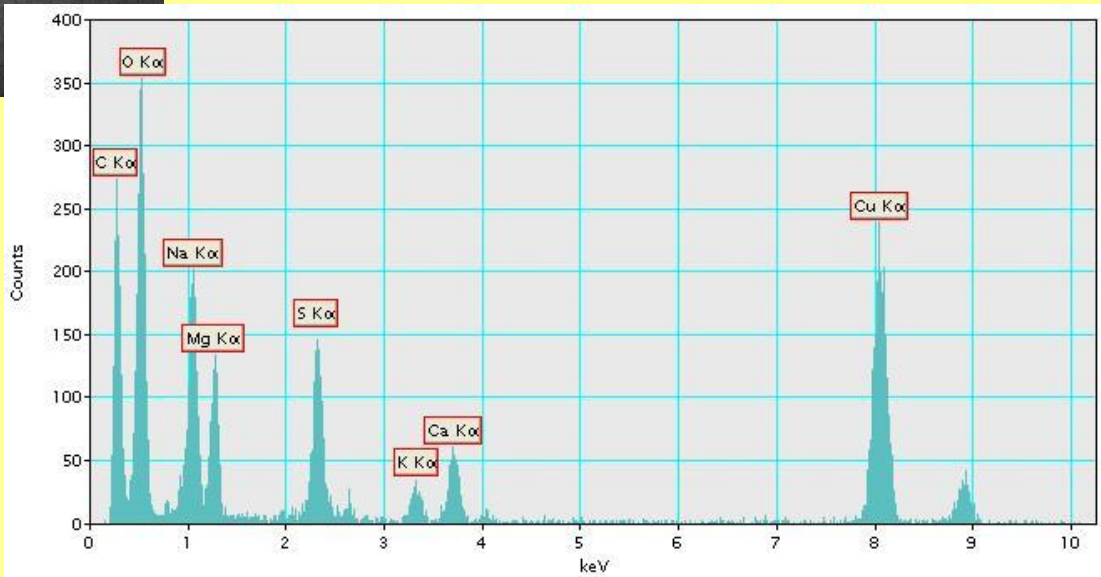
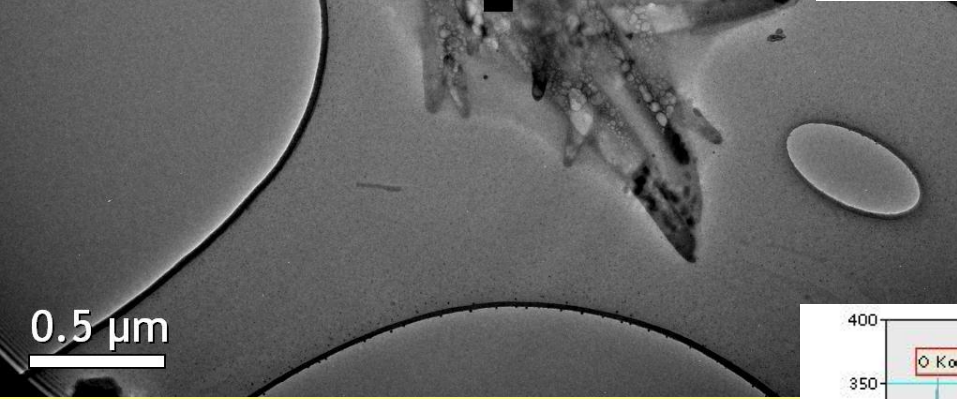
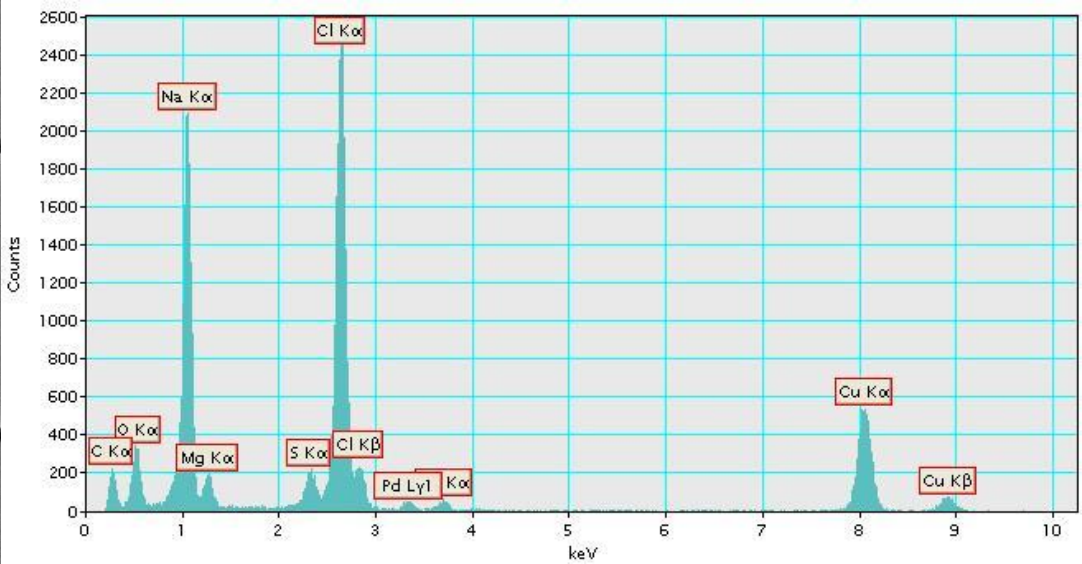
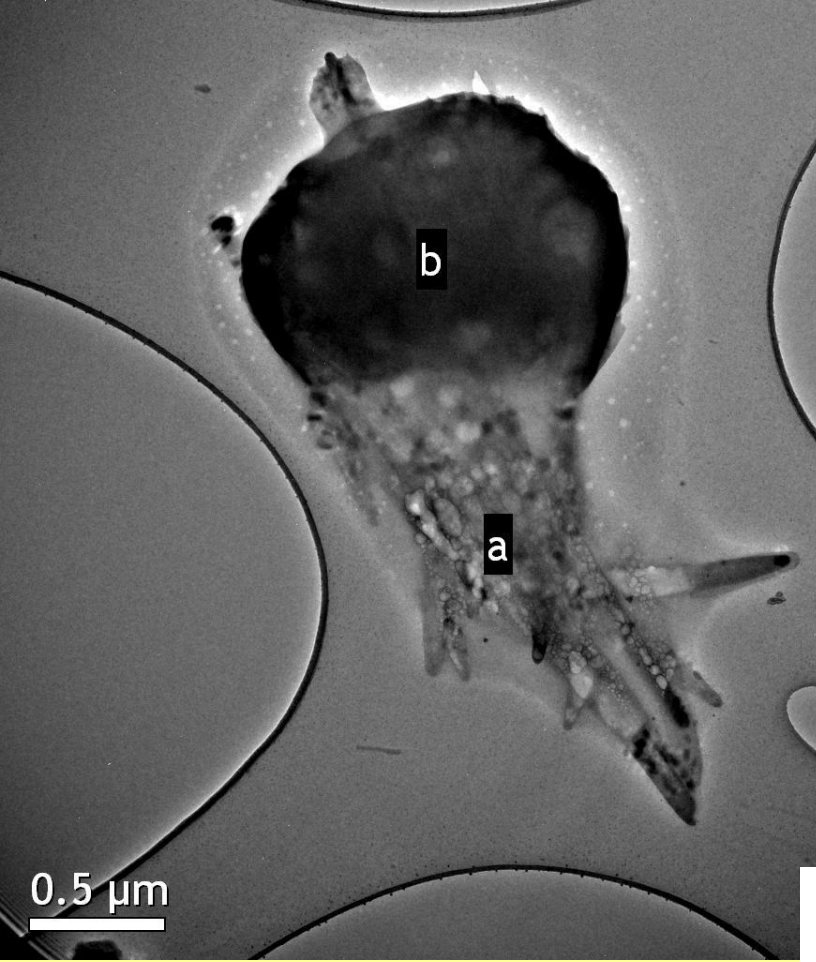


b

1/21 10:54 – 11:02, size cut 3.

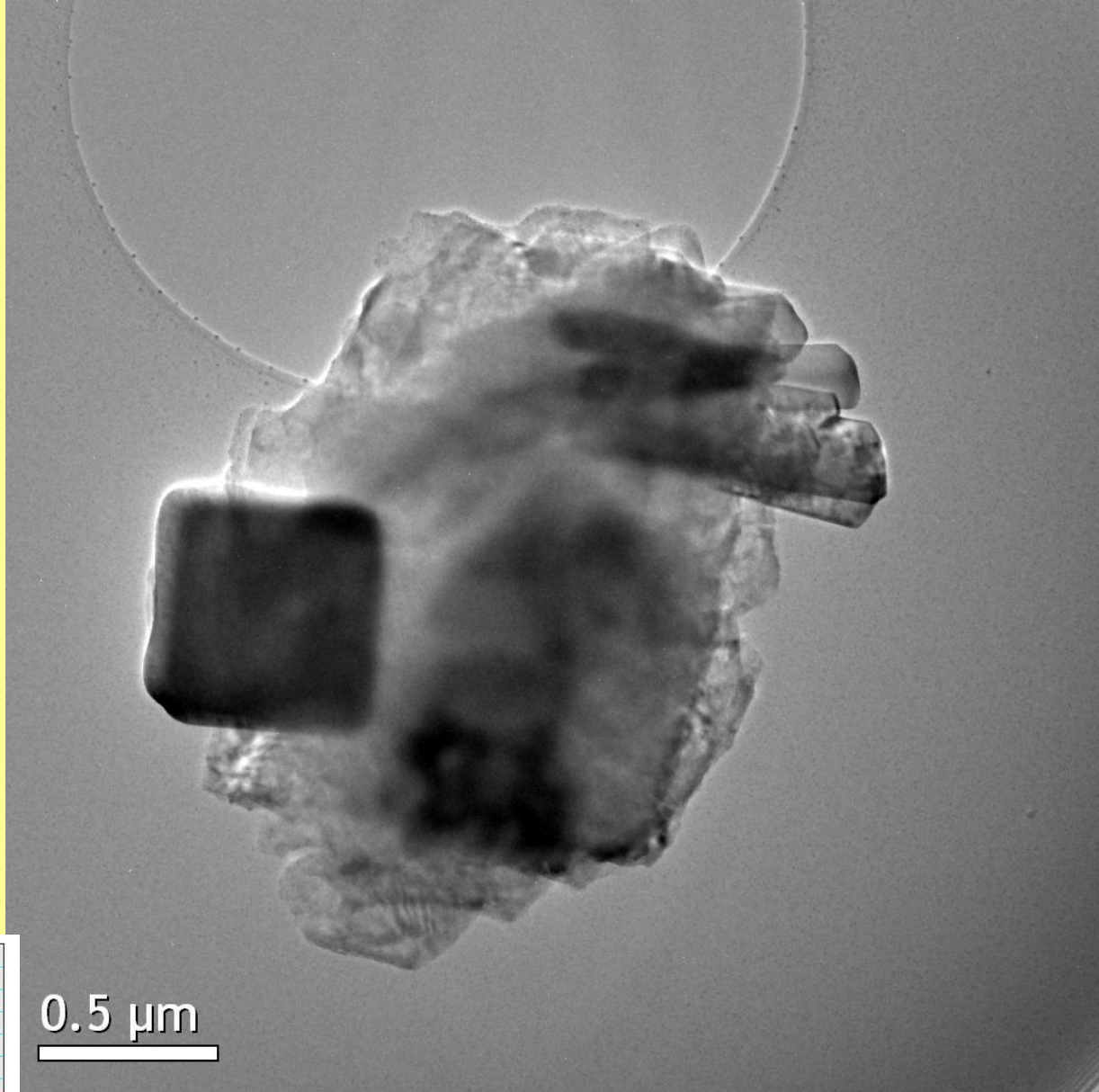
Ammonium sulfate (left) and sodium sulfate + amm. sulfate (and small soot), (right).



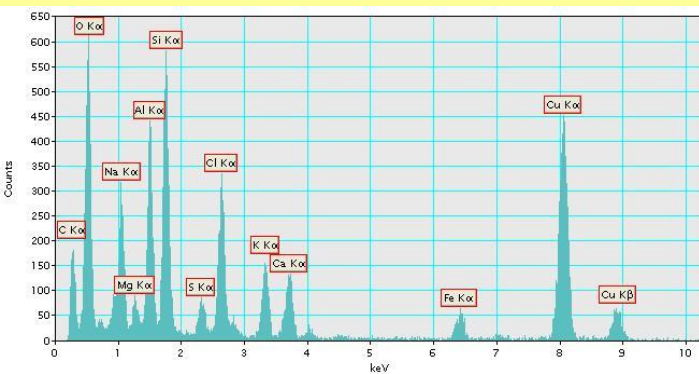


Not much soot compared to sulfate – may be advection of air at some level from bauxite mining area such as Guyana, and may include some volcanic sulfate.

1/21 – small amount
of dust present.



0.5 μm



1/21 10:54 – 11:02, size cut 2.

2 NaCl particles with typical observed morphologies. Note apparent coatings; these are common.

