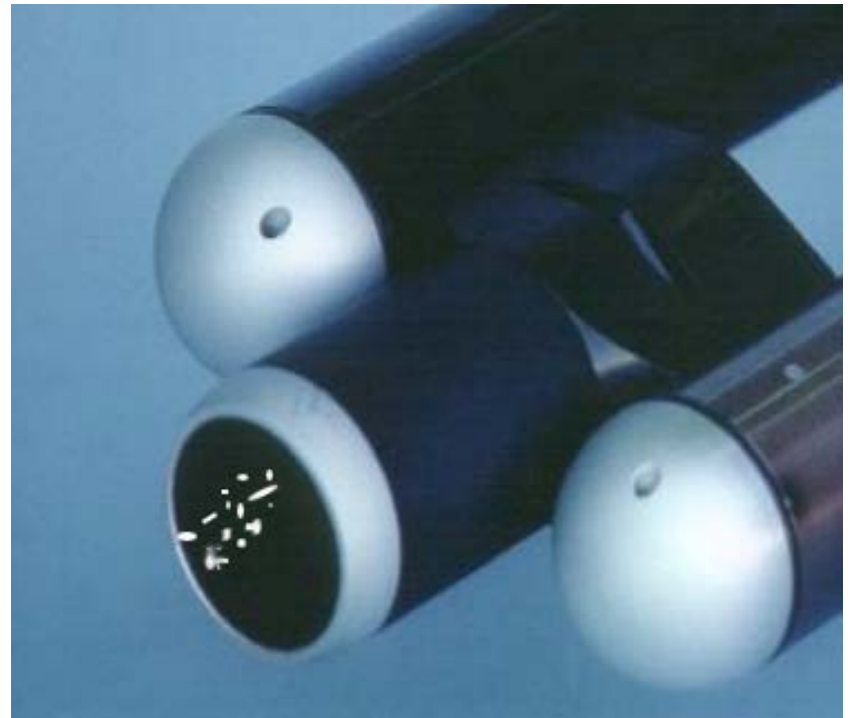
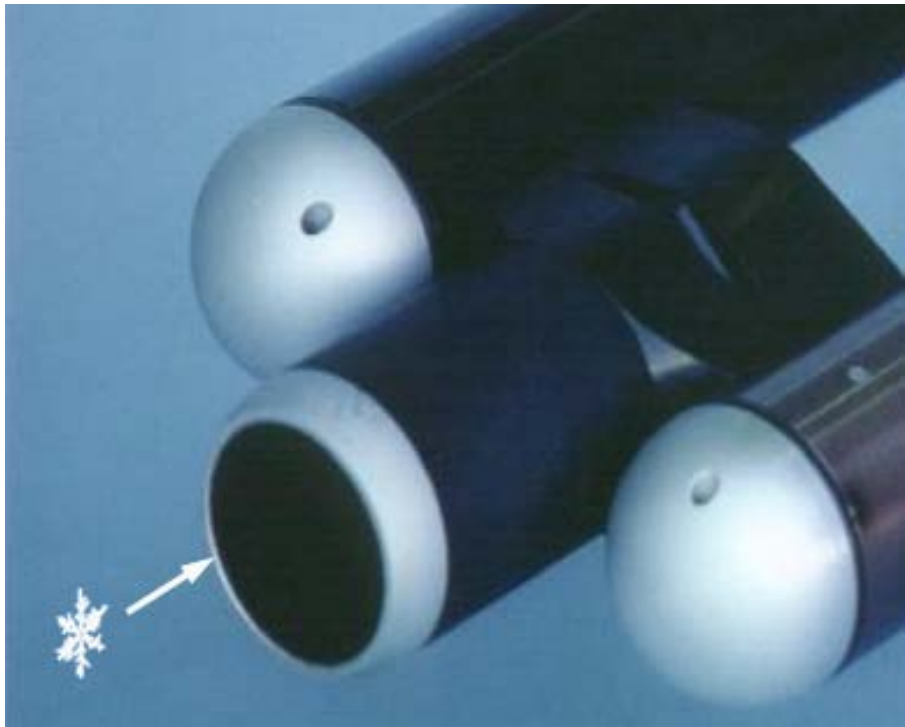


SPECC_{inc}

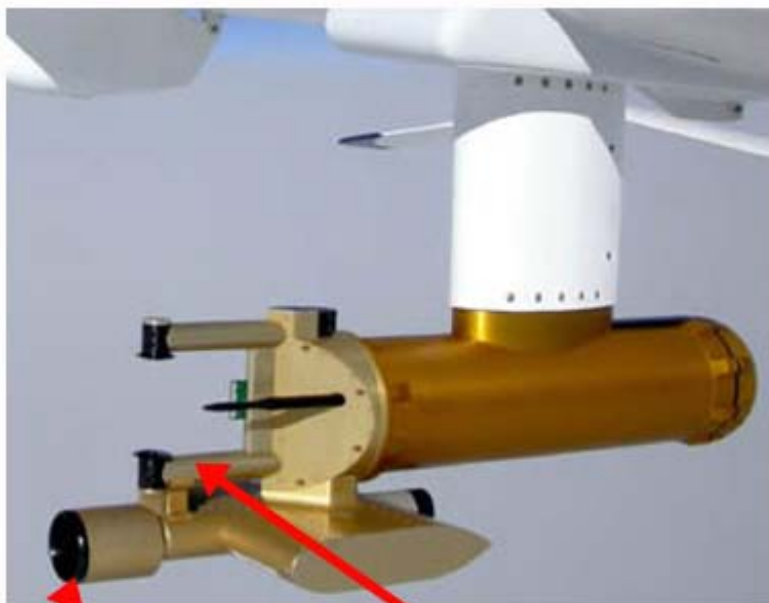
Ice Crystals Shattering on the Inlets of Cloud Particle Probes



Paul Lawson and Brad Baker

*Ice Particle Shattering
on the CAS in Cirrus
Anvils During the TC4
Field Campaign*

CAPS



CAS

CIP

2D-S



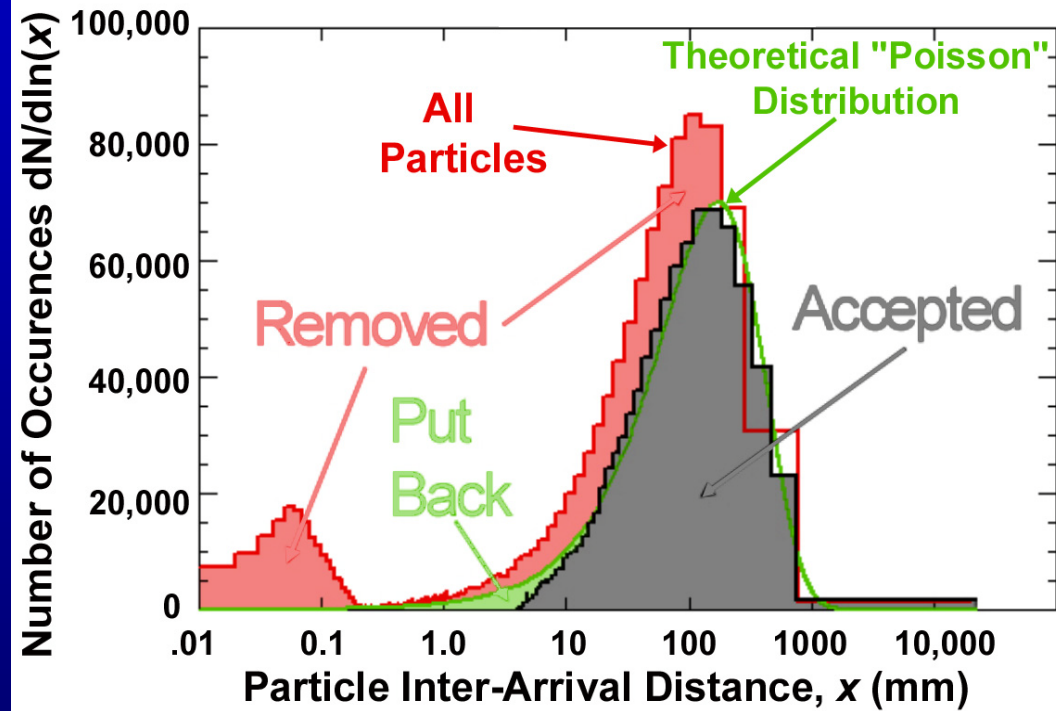
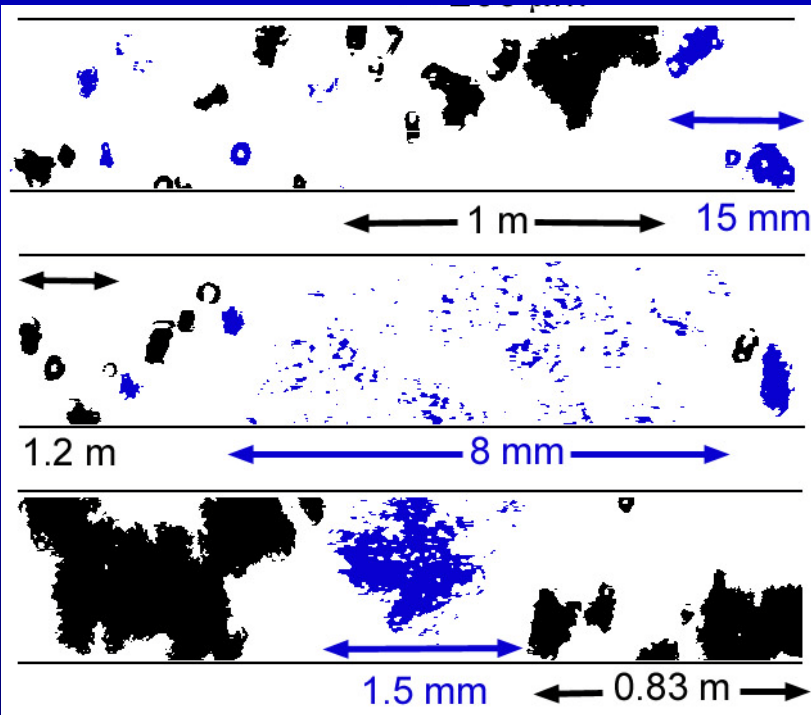
2D-S

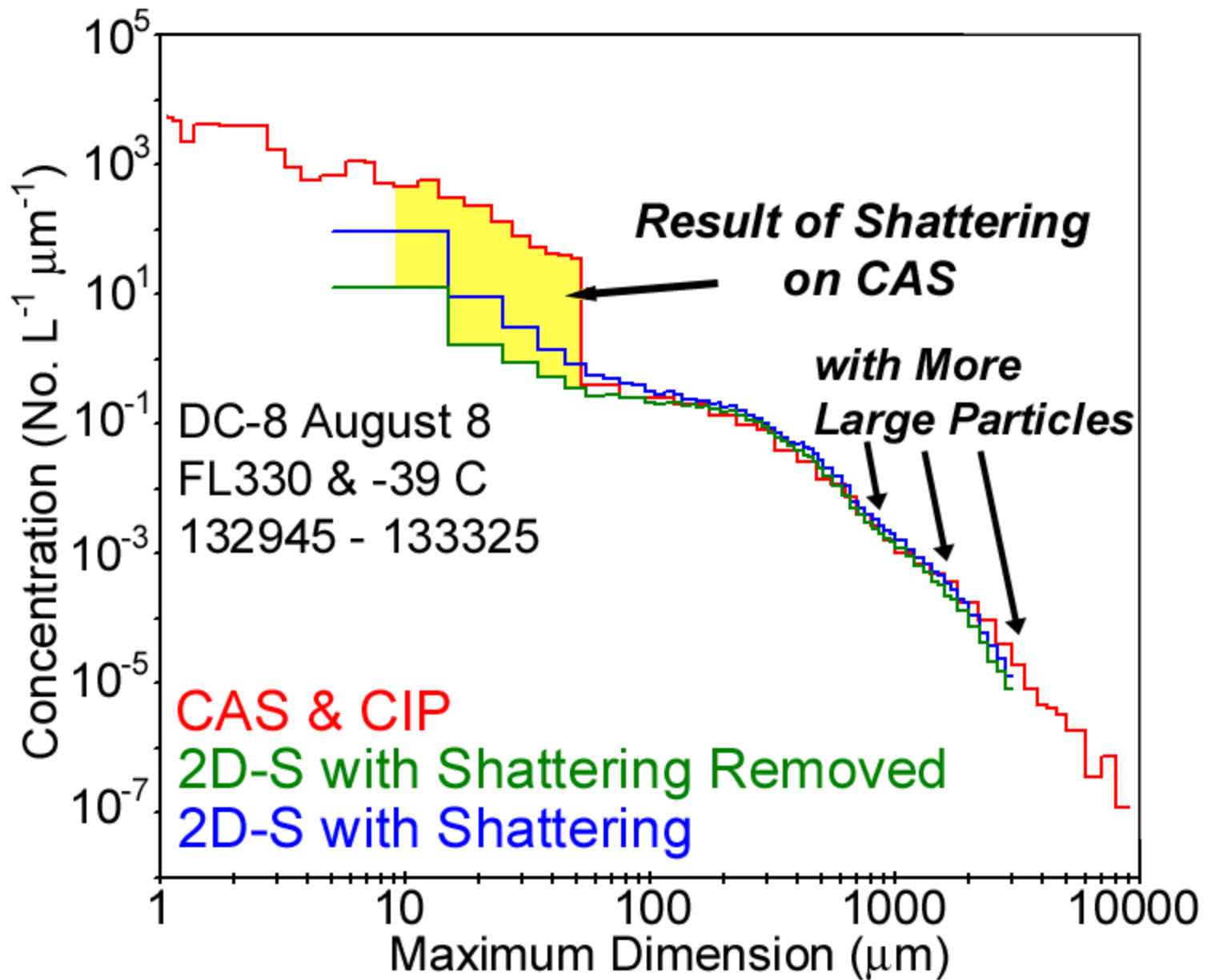
0.5 to 50 μm

50 μm to 3 mm

10 μm to 3 mm

SPEC Particle Shattering Removal

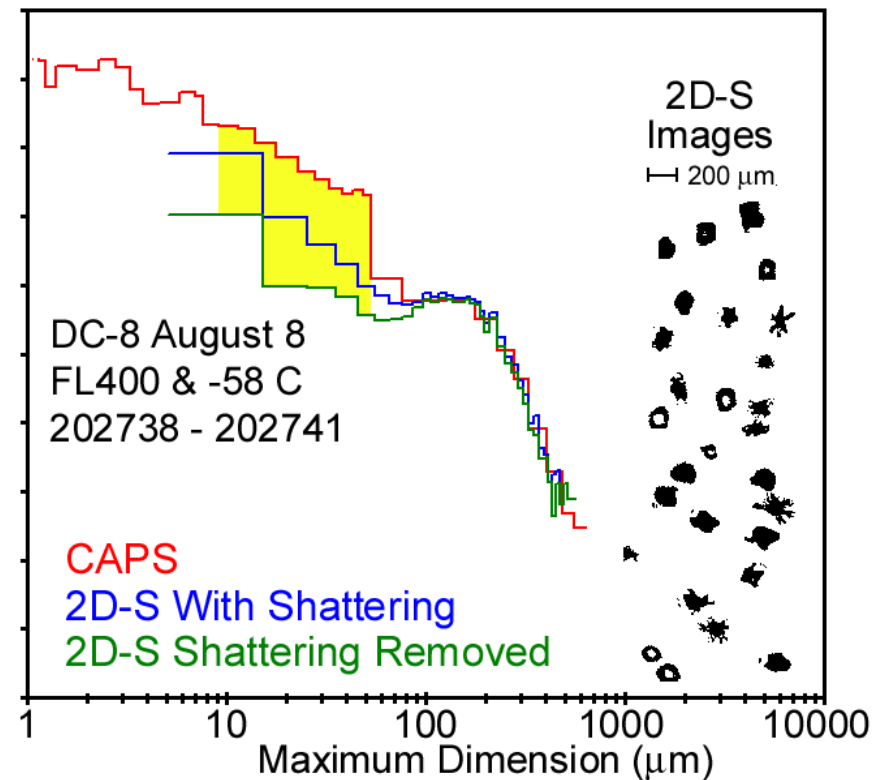
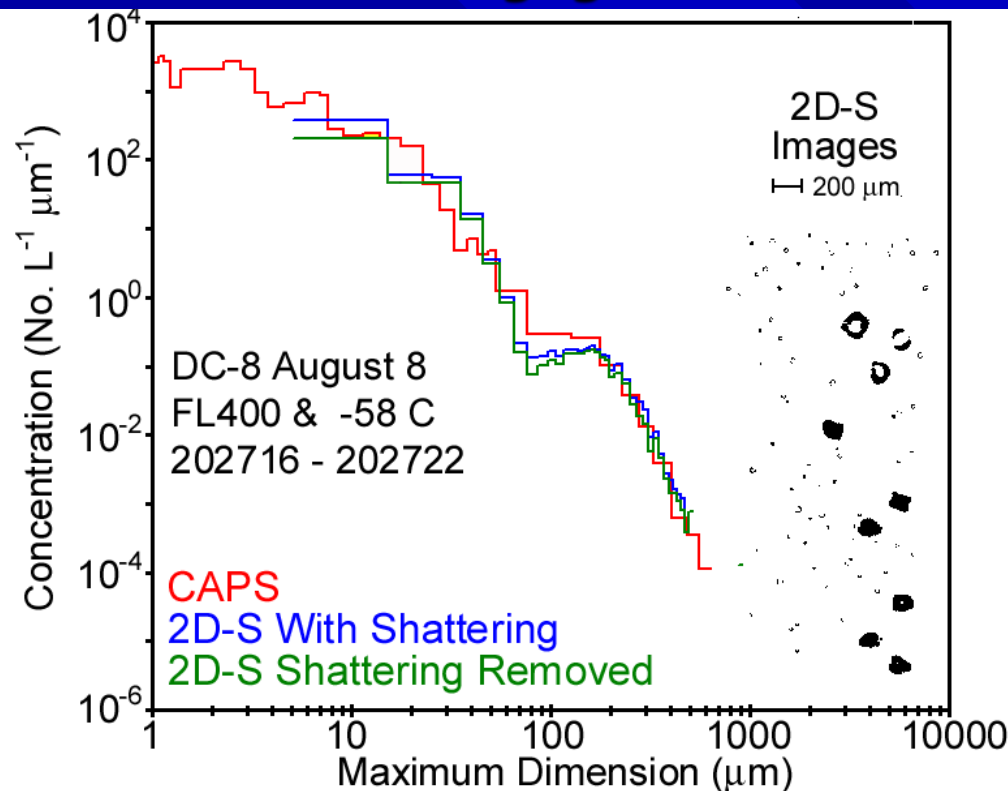




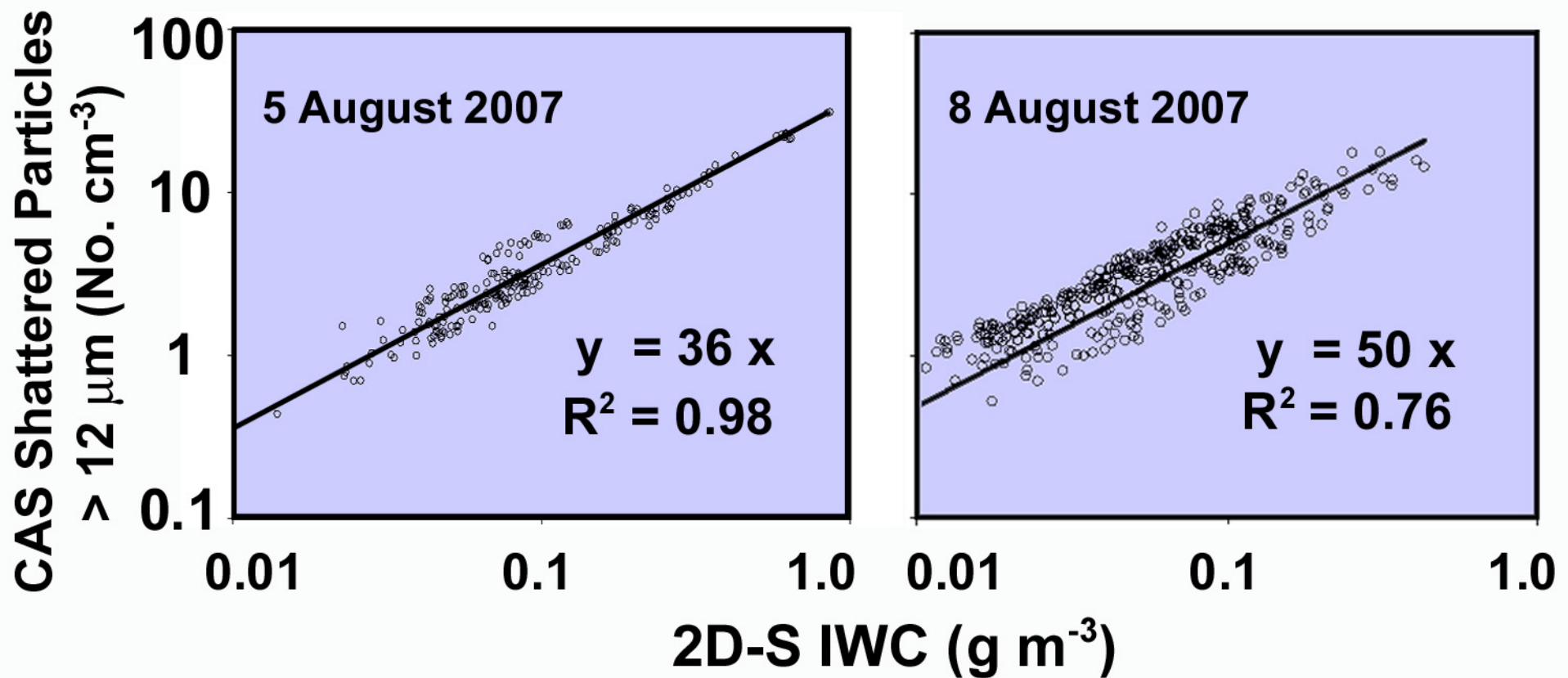
Comparison of Shattering in Two Regions 5 km Apart at the Top of Thick Cirrus in the Bight

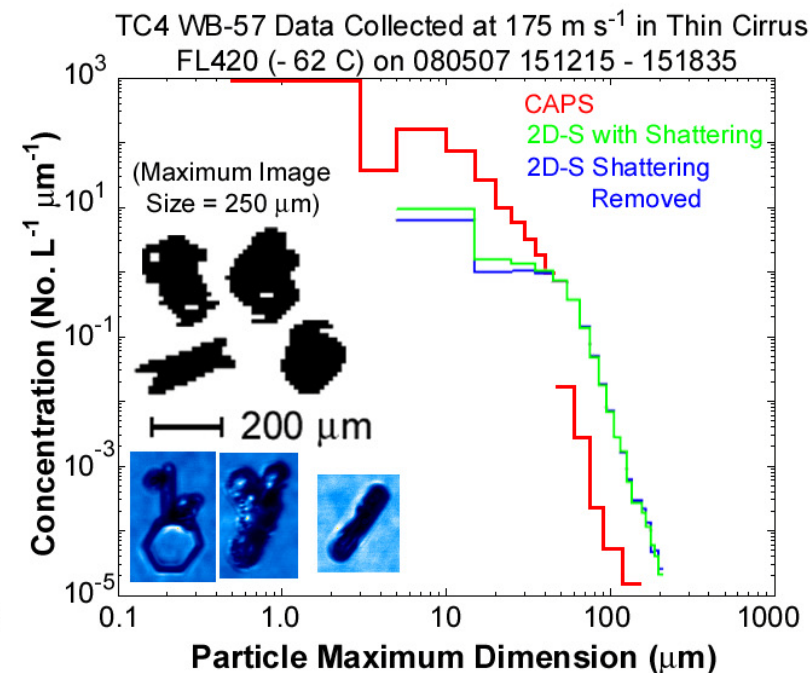
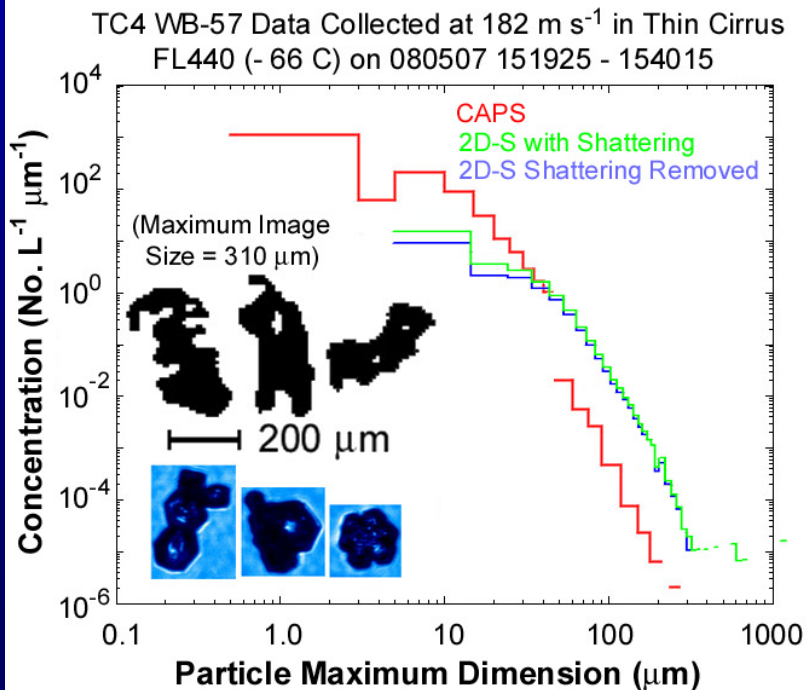
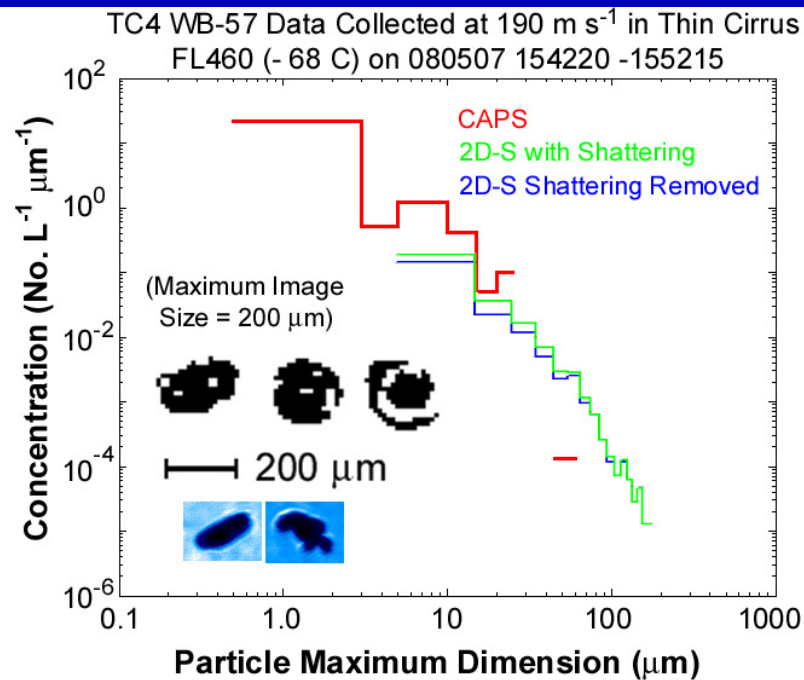
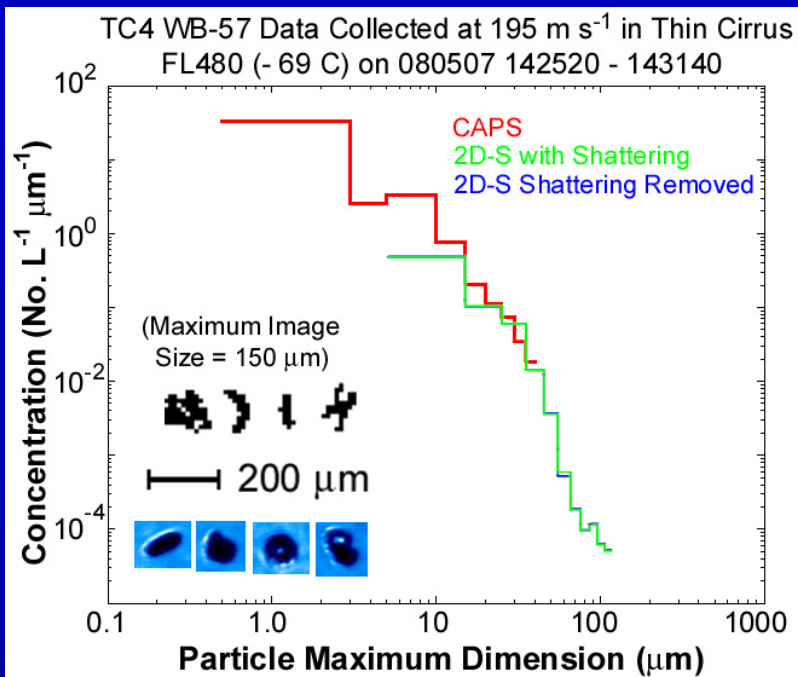
Example of Region with High Concentration (3 cm^{-3}) of Small Particles that Cause Effects of Shattering to be Negligible

Example of Region with Low Concentration (0.2 cm^{-3}) of Small Particles Showing Large Effect of Shattering on CAS

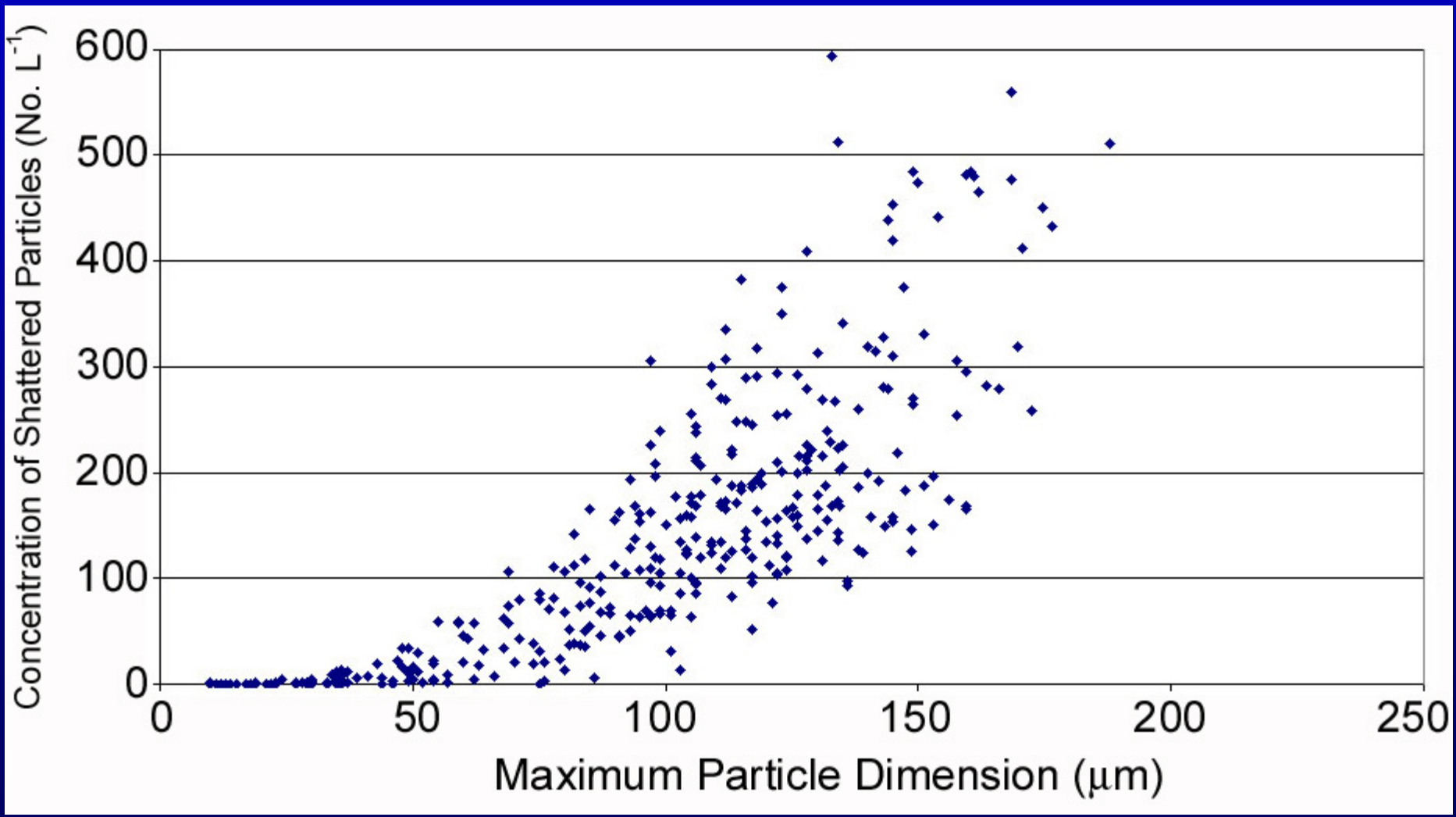


Plots from TC4 Cirrus Anvils Showing Concentration of Shattered Particles on CAS as a Function of 2D-S IWC. Each Data Point Represents a 10-s (~homogeneous) Region where the CAS/2D-S Ratio of 10 to 50 μm Particles (with 2D-S Shatterers Removed) Exceeds 10





Plot Showing Increase in Concentration of Shattered Ice Particles on 2D-S as a Function of Particle Size



*Ice Particle Shattering
in Mixed-Phase Arctic
Stratus During the
ISDAC Field Campaign*

2008/04/26 H reject eq 0 and 20 images per second at most



Time: from02:46:42.831.959.845----- to -----02:46:50.478.473.675

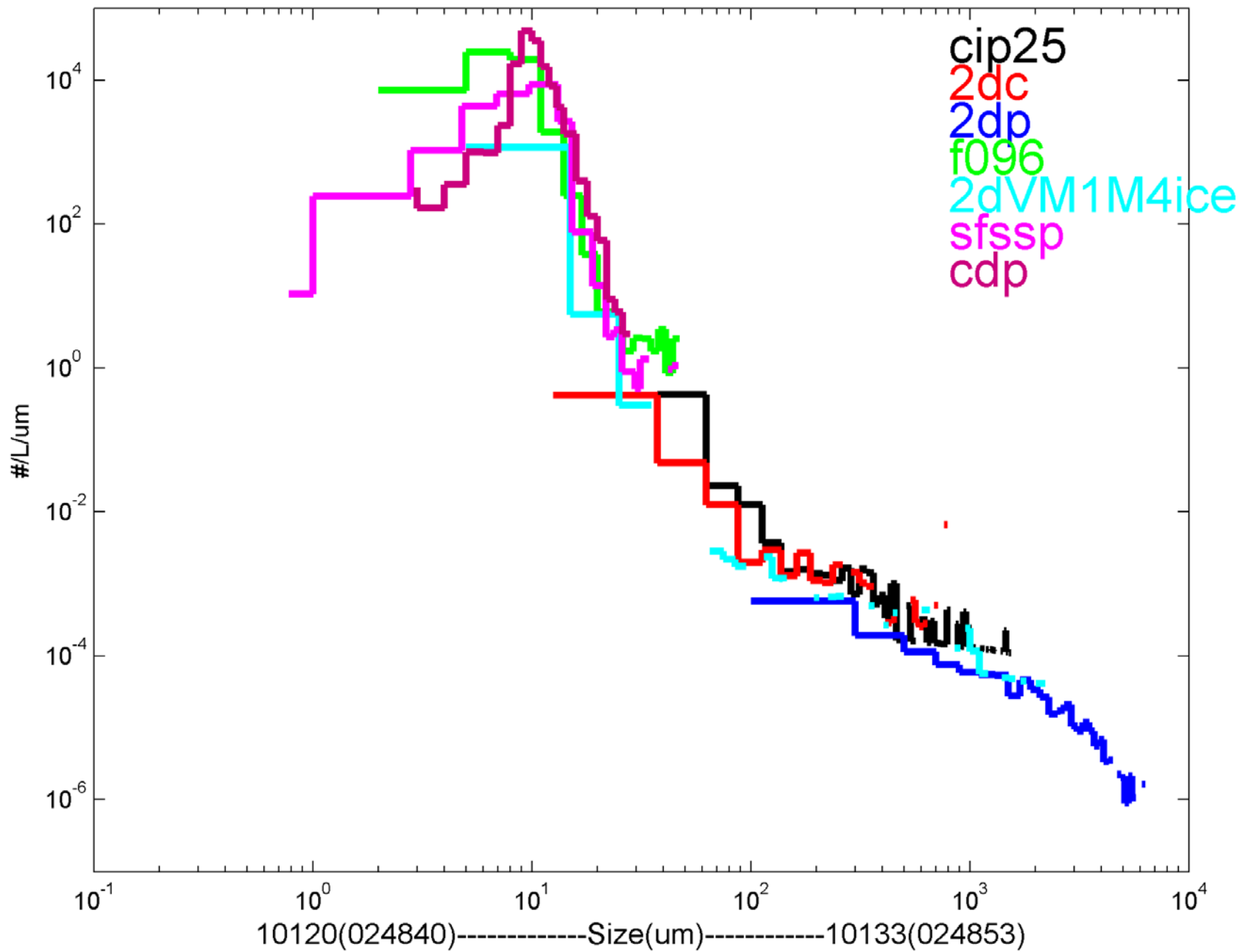


Time: from02:46:50.487.928.037----- to -----02:46:58.597.866.015



Time: from02:46:58.637.796.973----- to -----02:47:05.022.335.696







Time: from 01:21:20.656.176.131----- to -----01:21:23.104.387.255



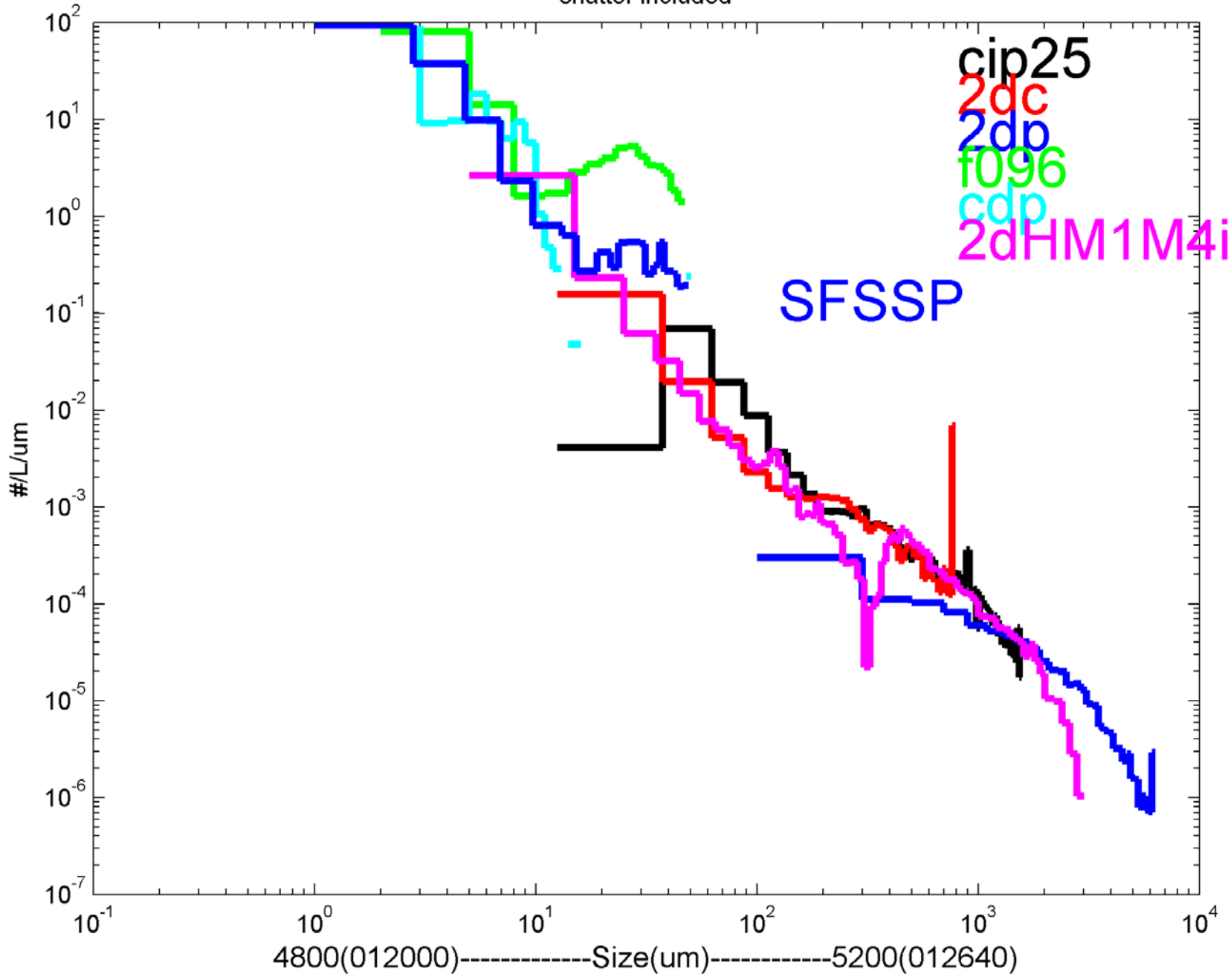
Time: from 01:21:23.286.403.547----- to -----01:21:28.318.746.581



Time: from 01:21:28.325.551.525----- to -----01:21:30.821.336.918



shatter included

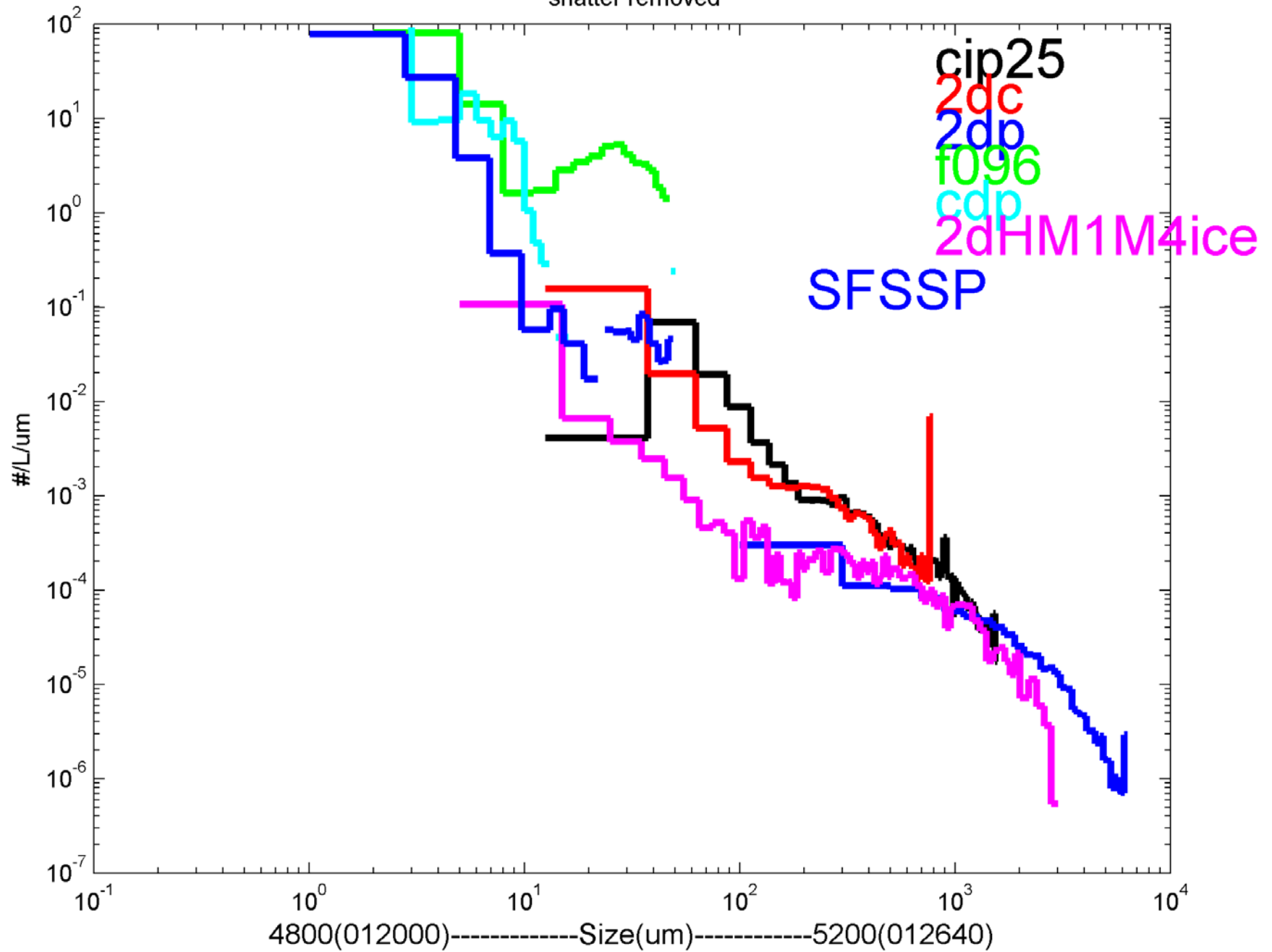


cip25
2dc
2db
f096
cdp
2dHM1M4ice

SFSSP

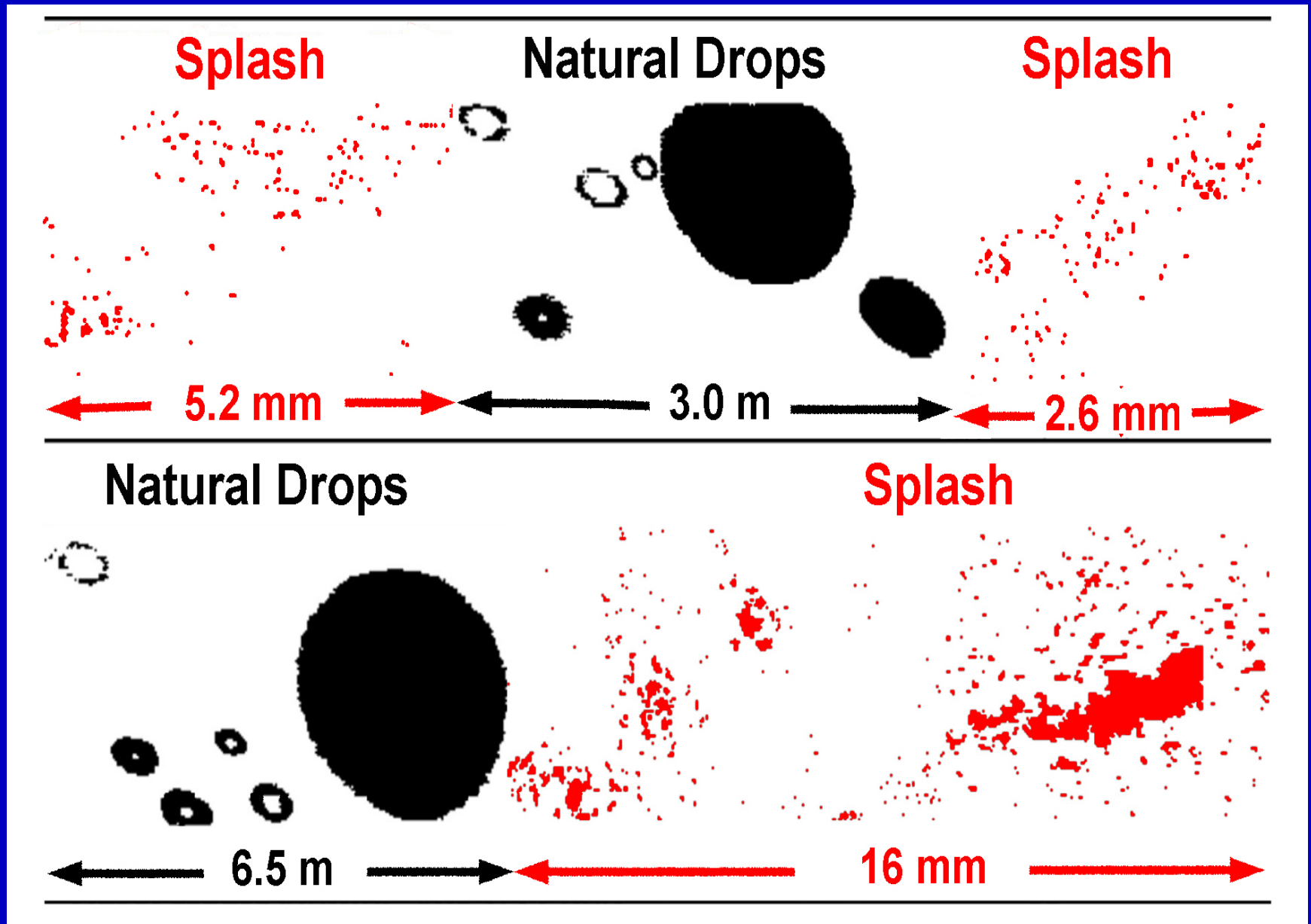
4800(012000)-----Size(um)-----5200(012640)

shatter removed

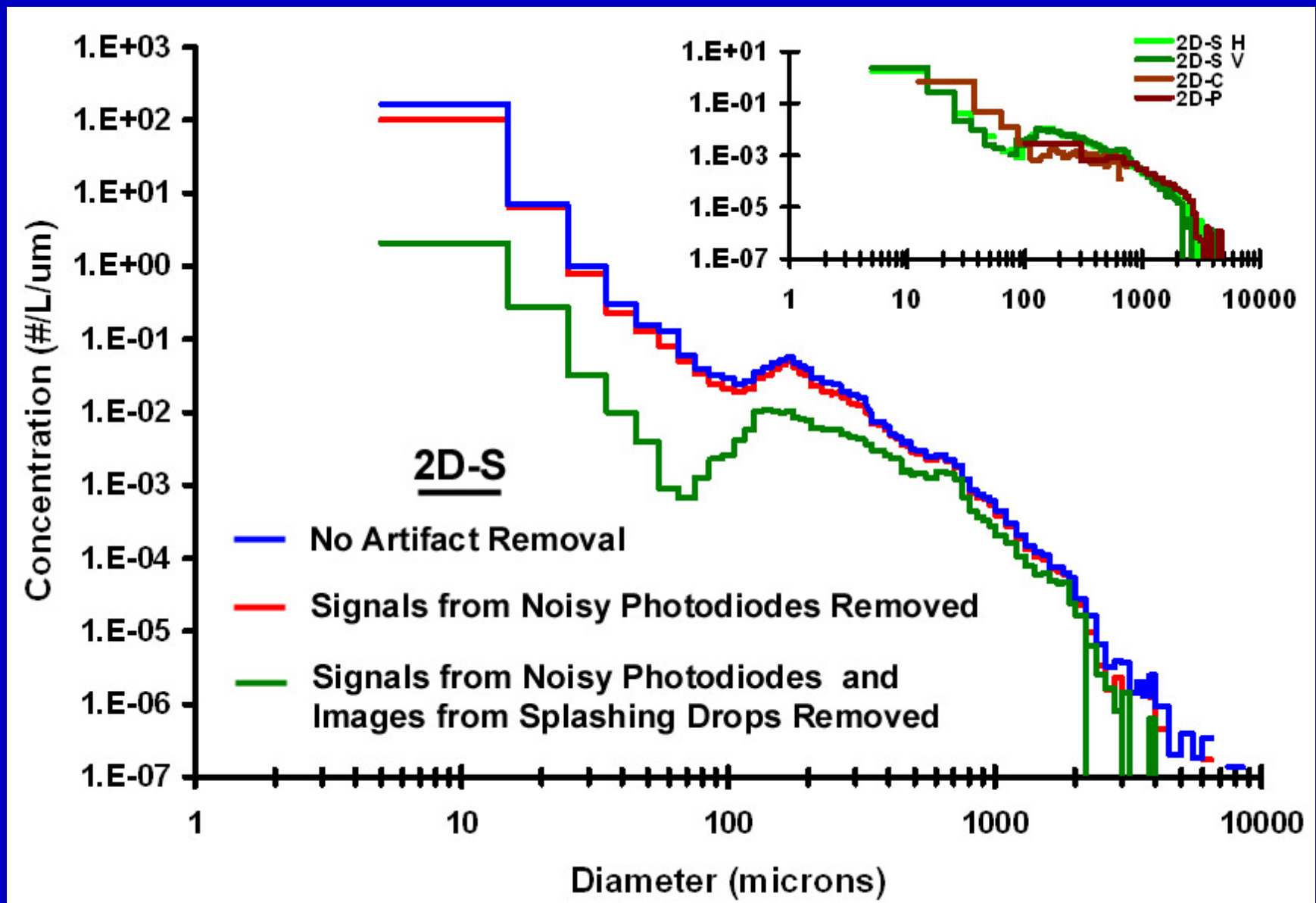


*Raindrops Splashing in
Rain Shafts During the
RICO Field Campaign*

Example of Splashes in a RICO Rain shaft



NCAR C-130 Penetration of over 600 Rain shafts during RICO (Baker et al. 2007 - Submitted to *JAM*)



Measurements in 600 RICO Rainshafts show there is a Dearth of (20 to 100 μm) Cloud Drops

