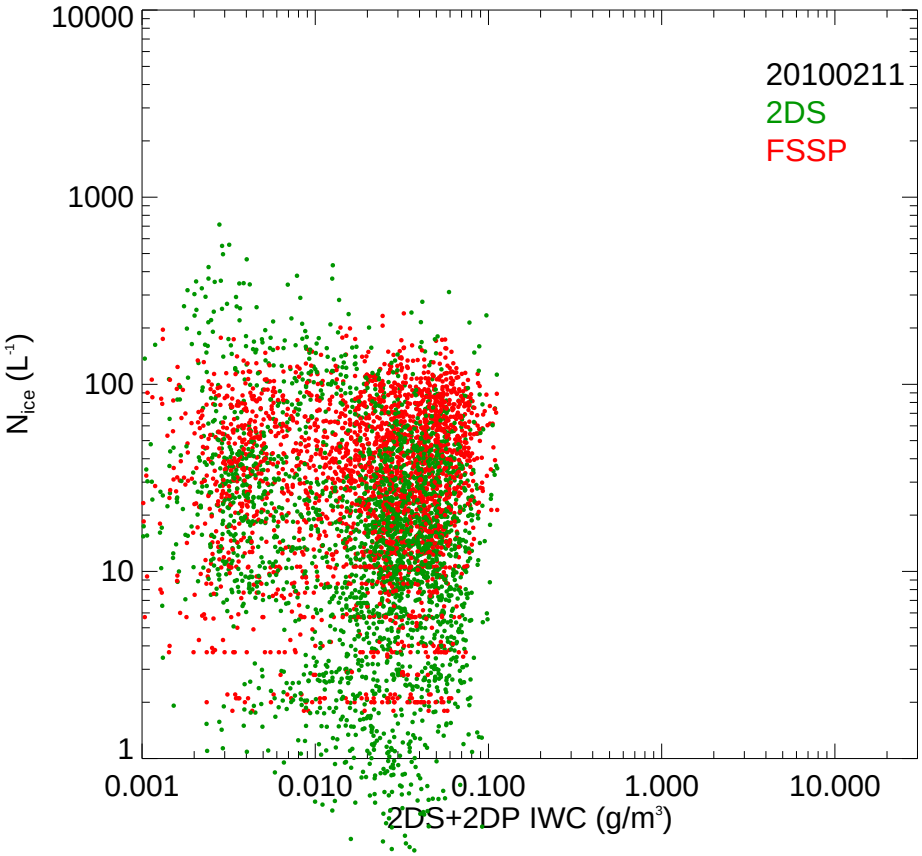
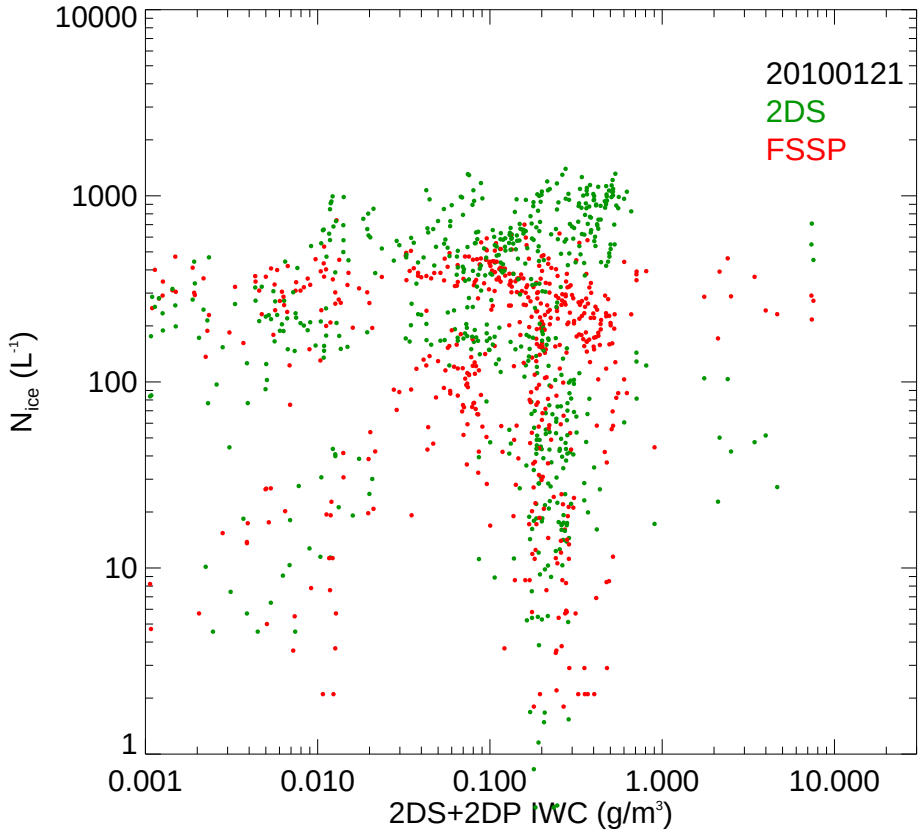
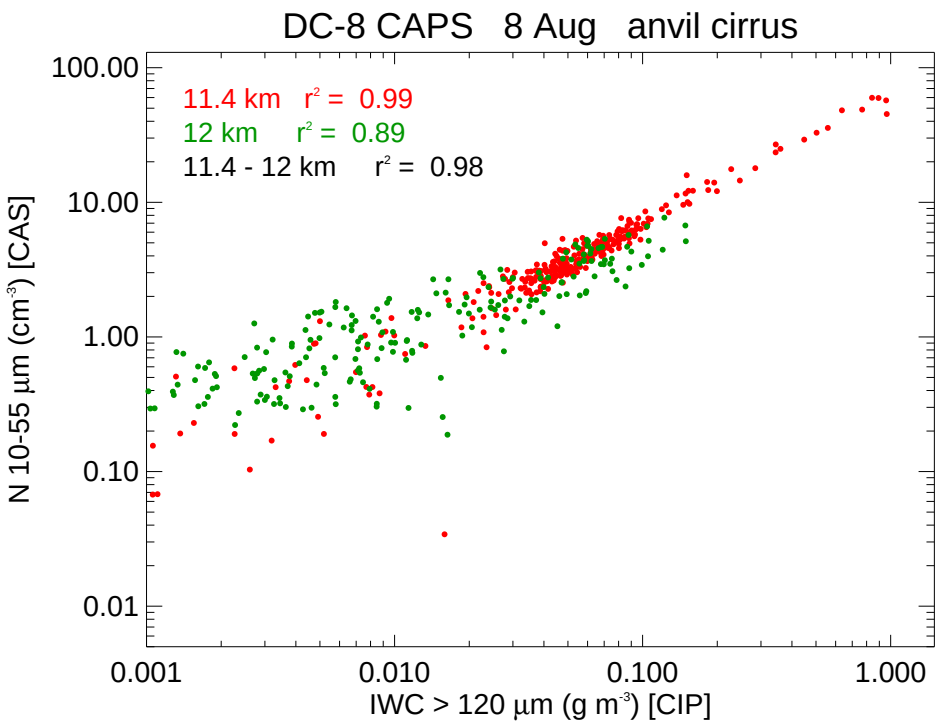
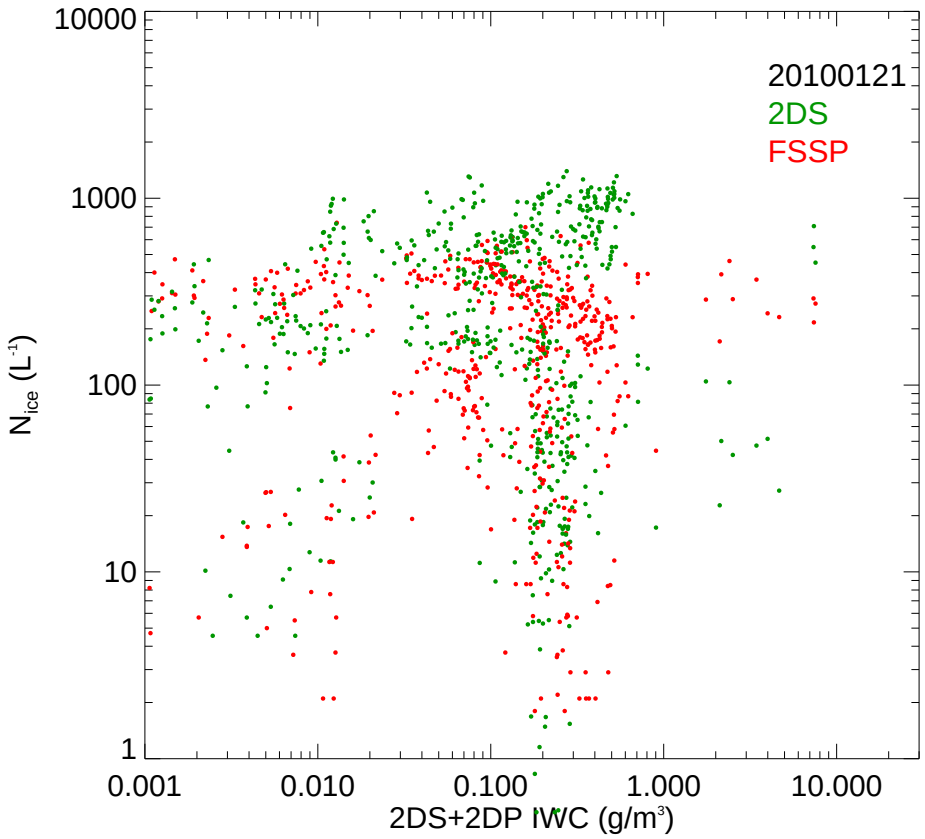
Shatterin artifacts?

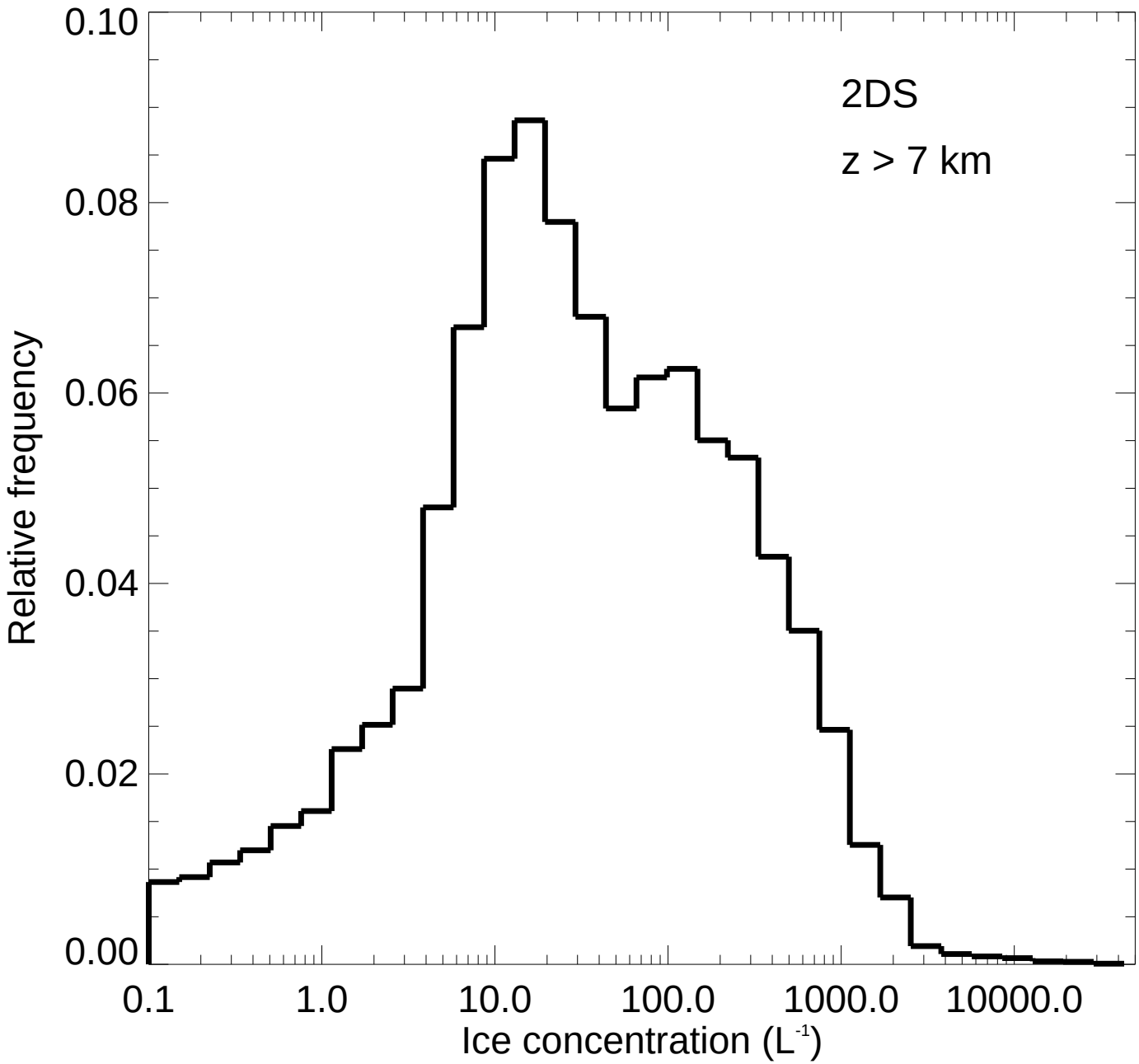


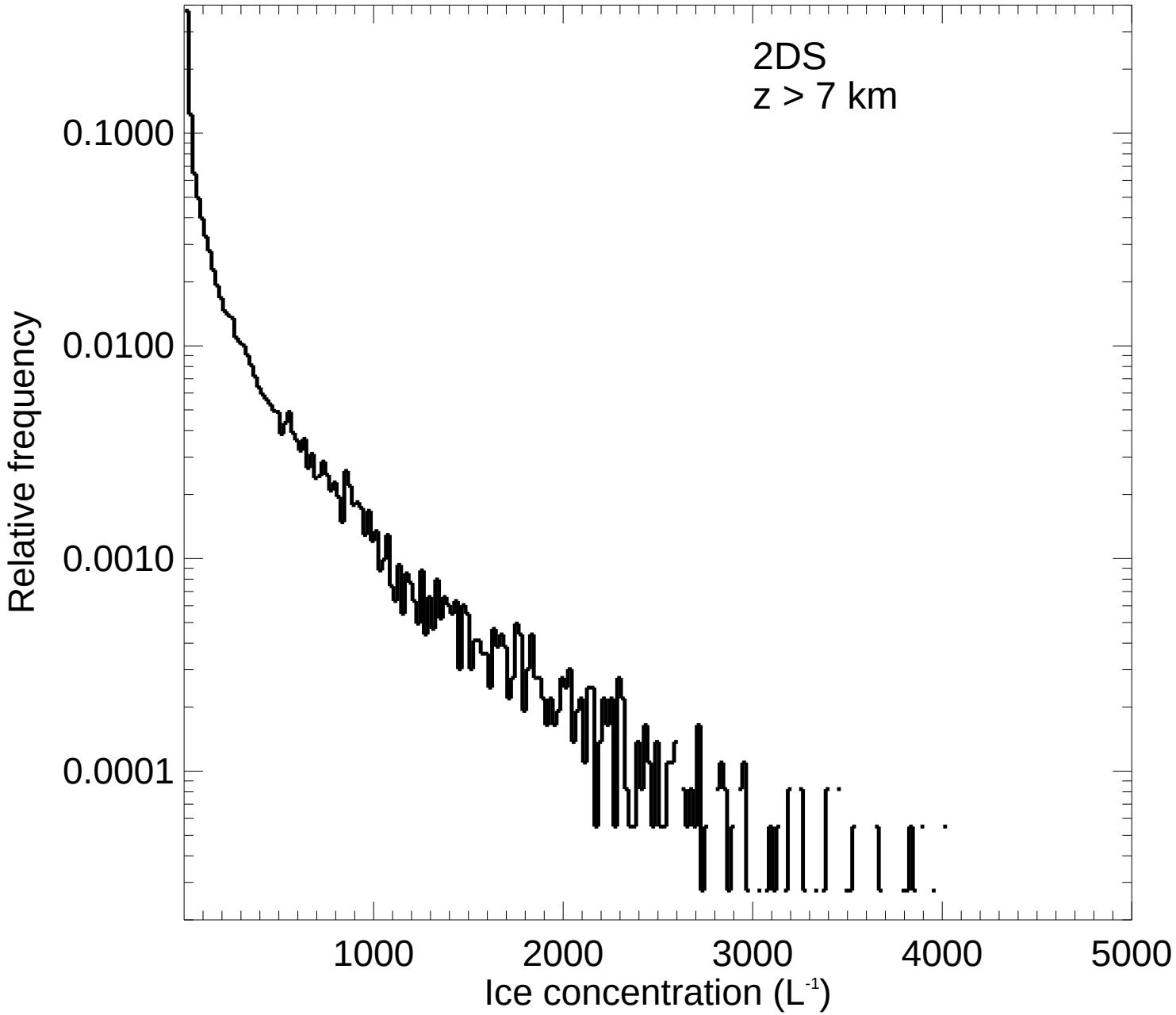


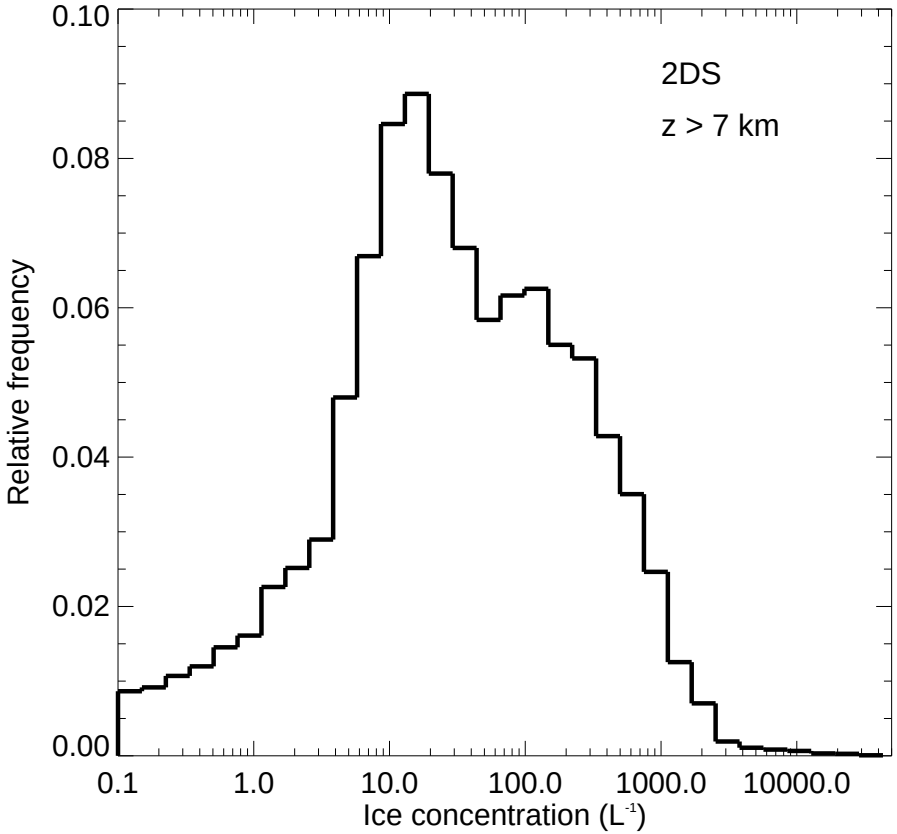
Shatterin artifacts?

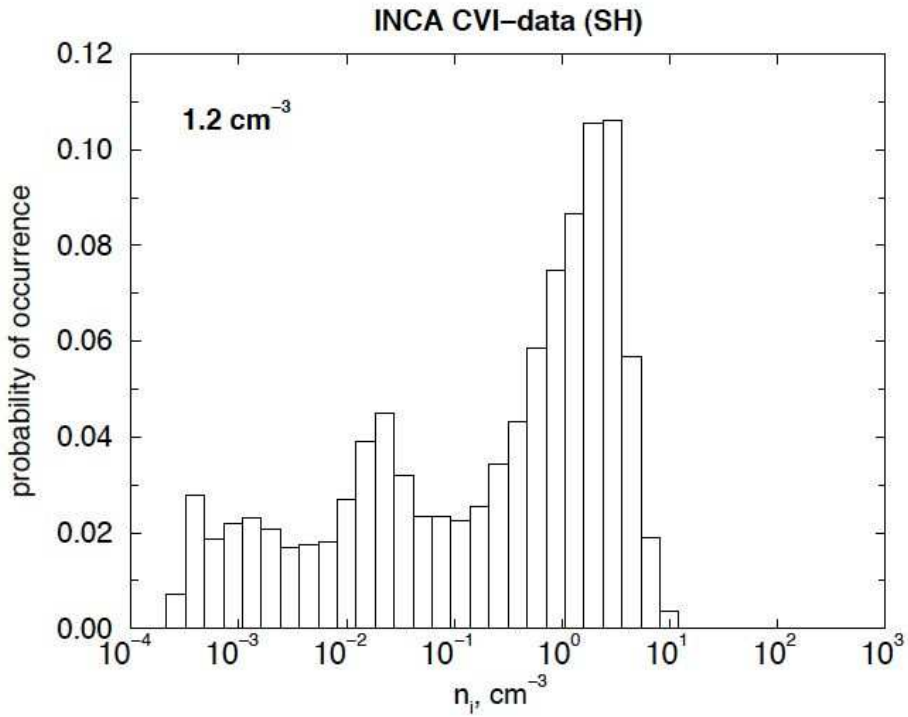


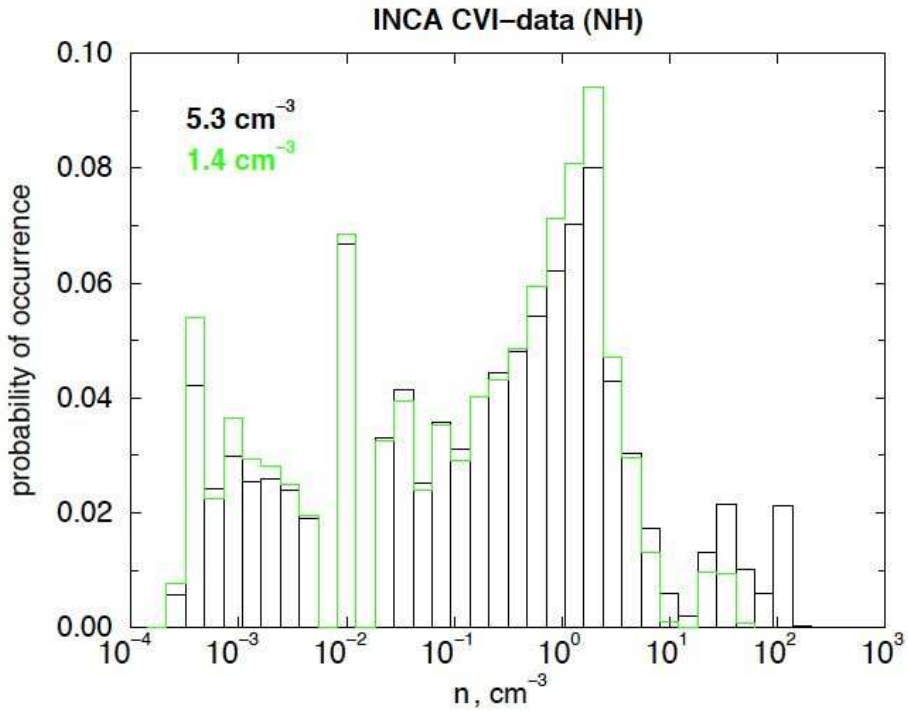



2DS
z > 7 km
Relative frequency
0.10
0.08
0.06
0.04
0.02
0.00
0.1
1.0
10.0
100.0
1000.0
10000.0
Ice concentration (L-1)

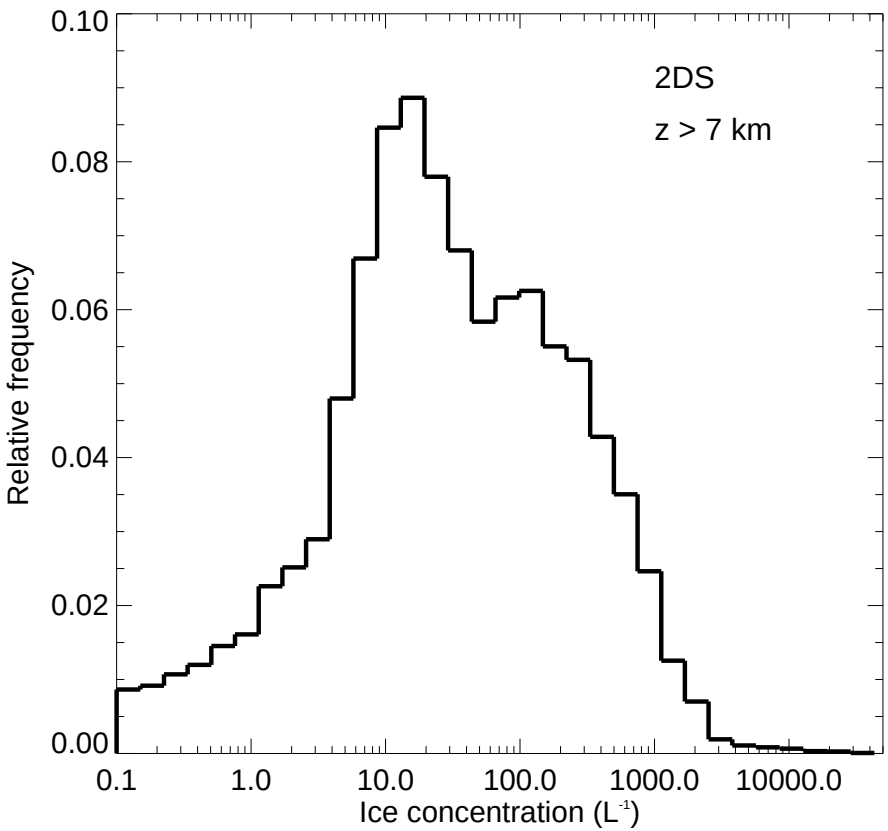

2DS
z > 7 km
0.1000
0.0100
0.0010
0.0001
Relative frequency
1000
2000
3000
4000
5000
Ice concentration (L-1)

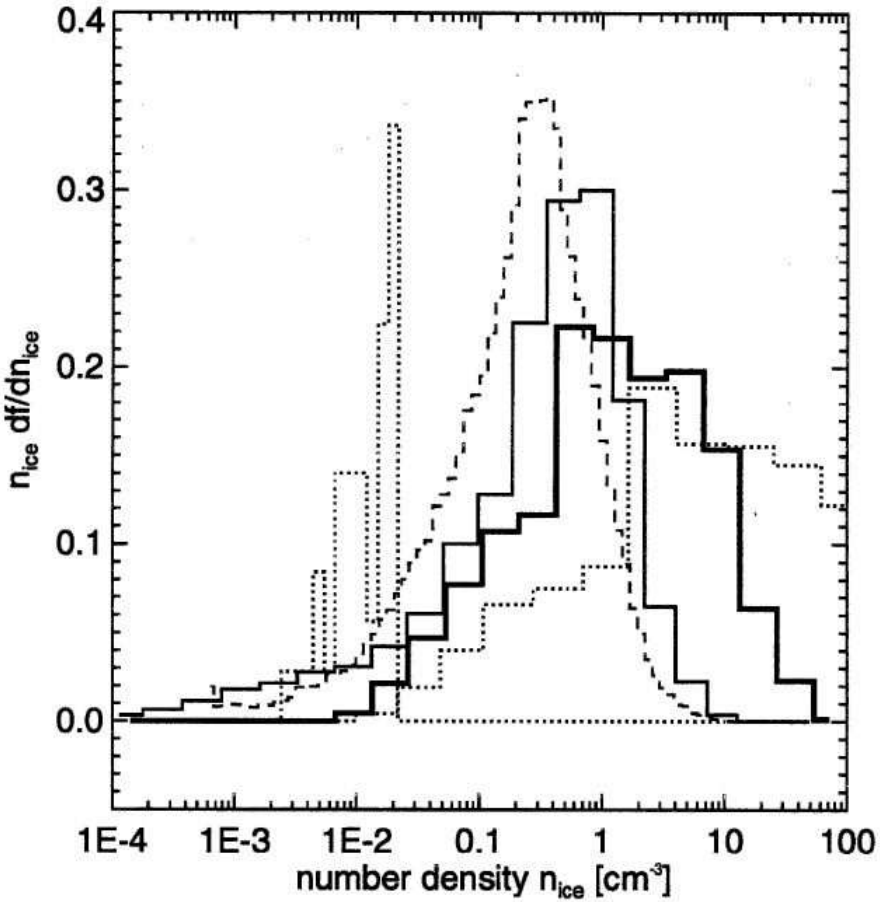




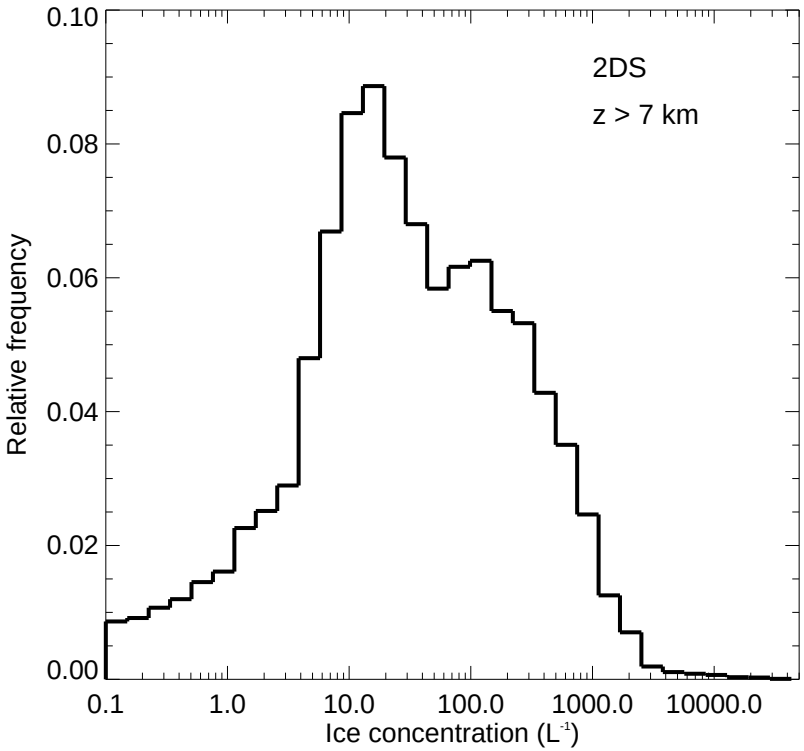


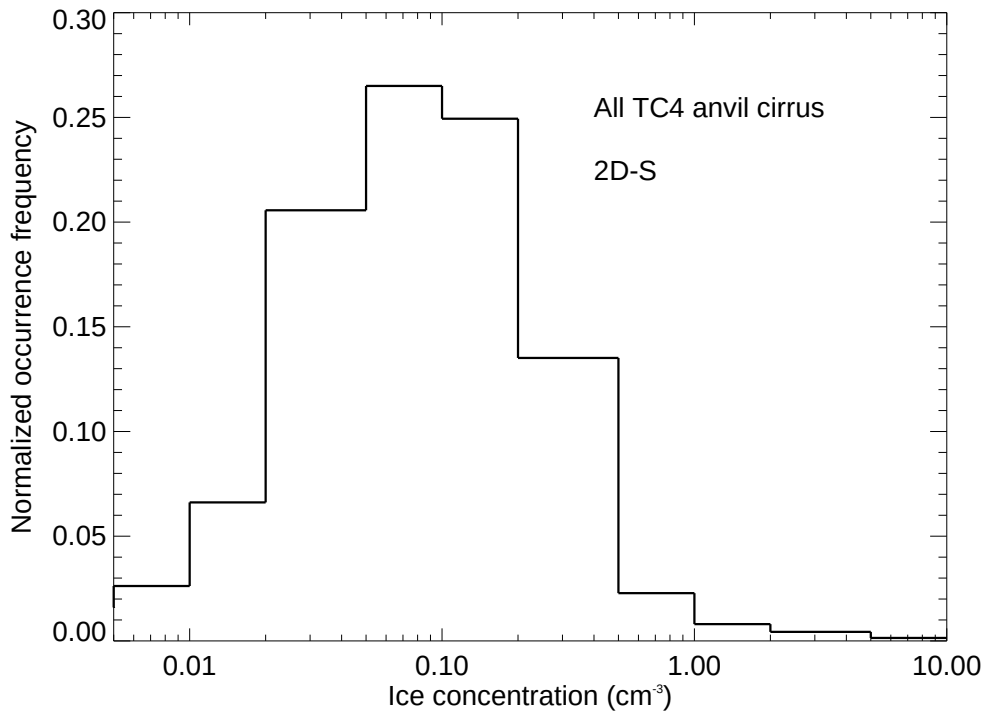
Kaercher and Stroem [2003]

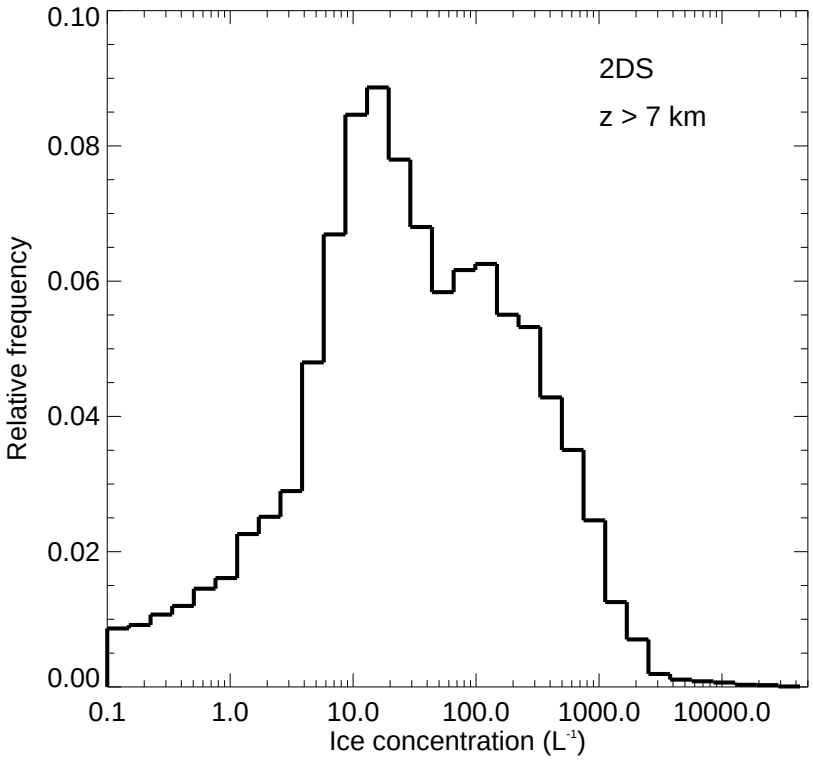


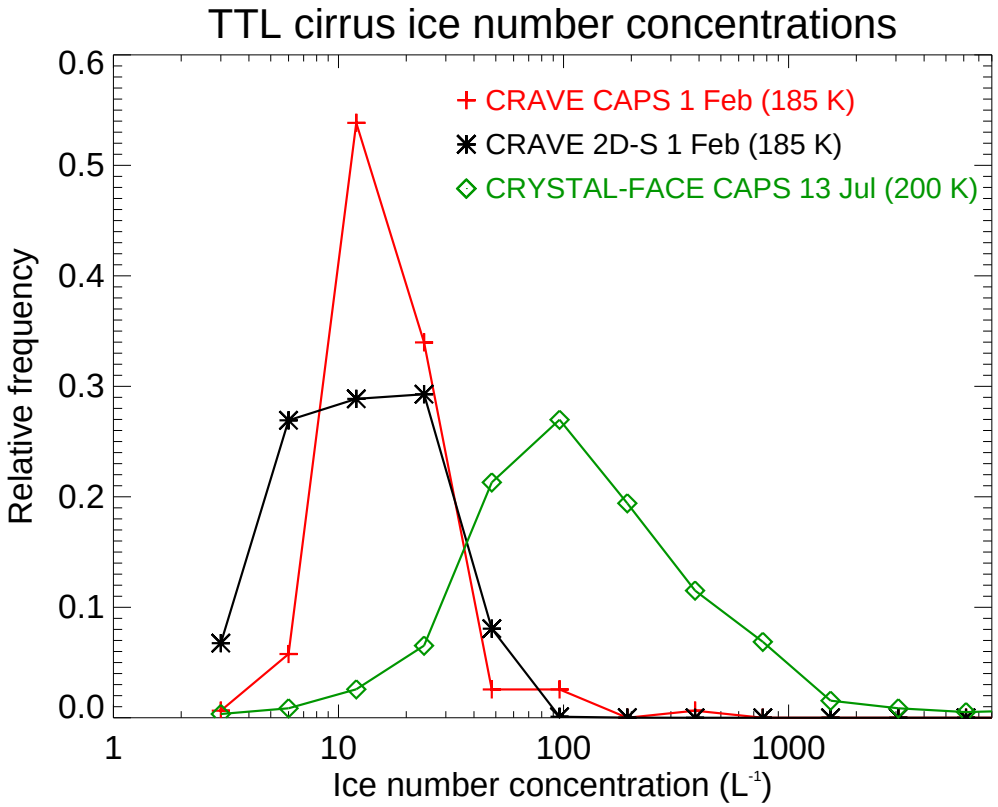


Hoyle et al. [2005] (MASP)


2DS
z > 7 km
Relative frequency
0.10
0.08
0.06
0.04
0.02
0.00
0.1
1.0
10.0
100.0
1000.0
10000.0
Ice concentration (L-1)


All TC4 anvil cirrus
2D-S
Normalized occurrence frequency
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0.01
0.10
1.00
10.00
Ice concentration (cm-3)


2DS
z > 7 km
Relative frequency
0.10
0.08
0.06
0.04
0.02
0.00
0.1
1.0
10.0
100.0
1000.0
10000.0
Ice concentration (L-1)


TTL cirrus ice number concentrations
CRAVE CAPS 1 Feb (185 K)
CRAVE 2D-S 1 Feb (185 K)
CRYSTAL-FACE CAPS 13 Jul (200 K)
Relative frequency
0.6
0.5
0.4
0.3
0.2
0.1
0.0
1
10
100
1000
Ice number concentration (L-1)

Research plan

- Compare/evaluate ice crystal size distribution measurements
- Run a large number of 1-D trajectory-curtain cirrus simulations
- Compare model statistics of ice concentration with Sparticus measurements
- Compare model statistics of cloud extinction with SGP lidar and CALIPSO measurements
- Provide statistics for evaluation/improvement of GCM cloud parameterizations