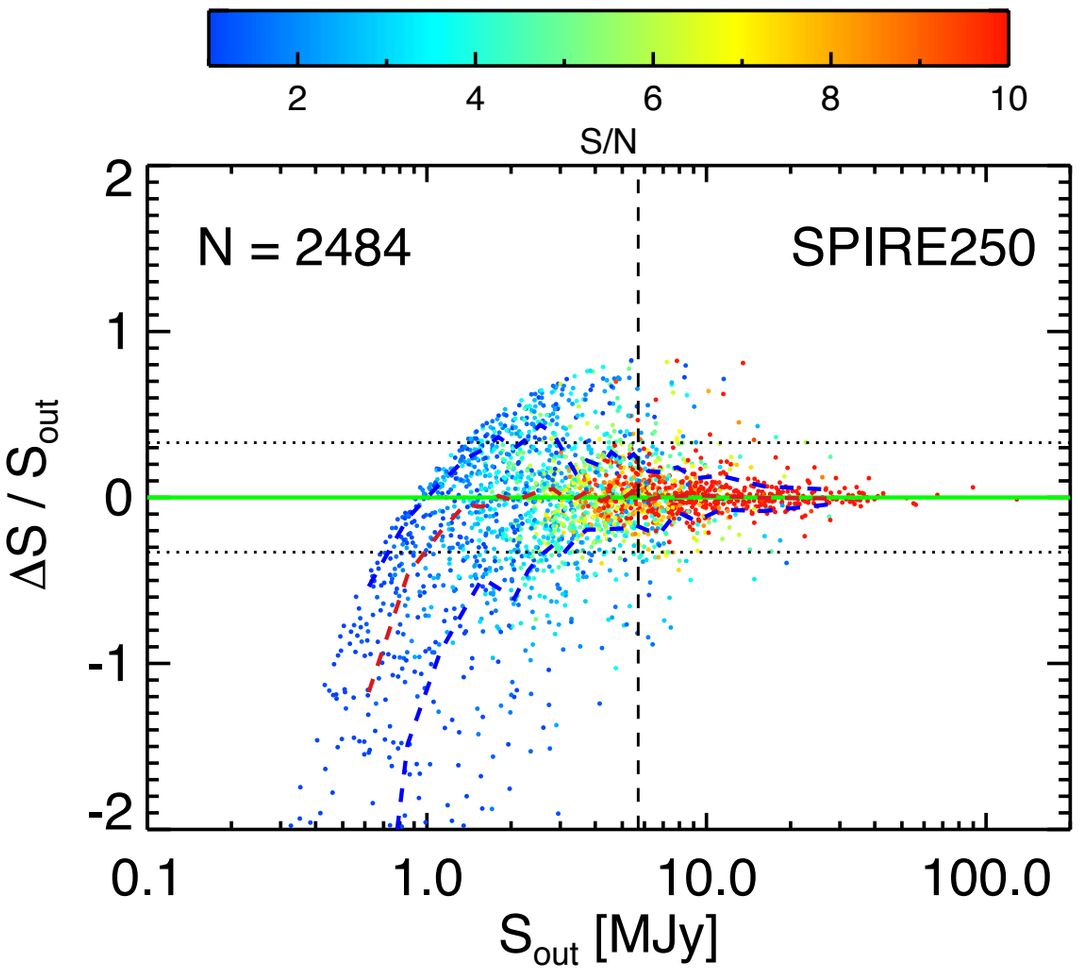
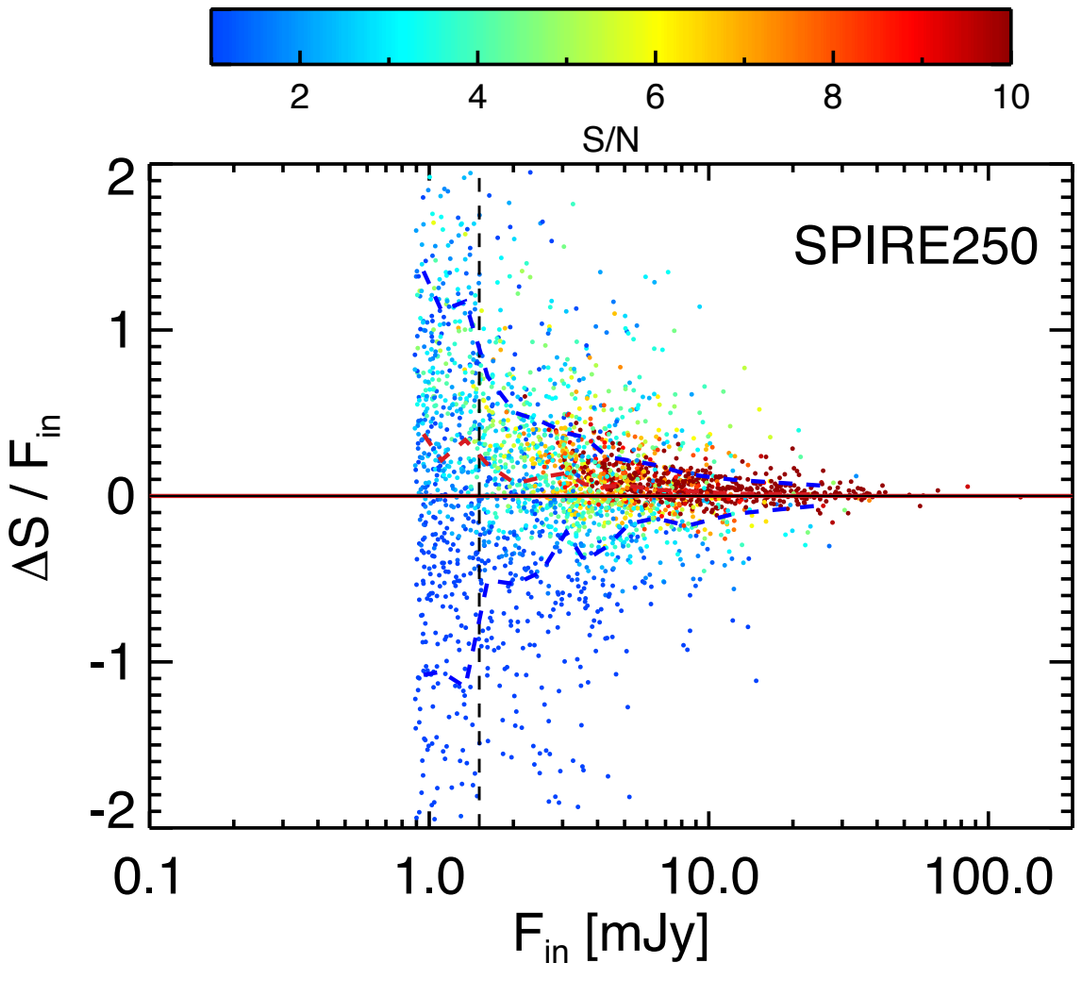
Recipe for value-added Herschel catalogs —prior source extraction with covariance matrix

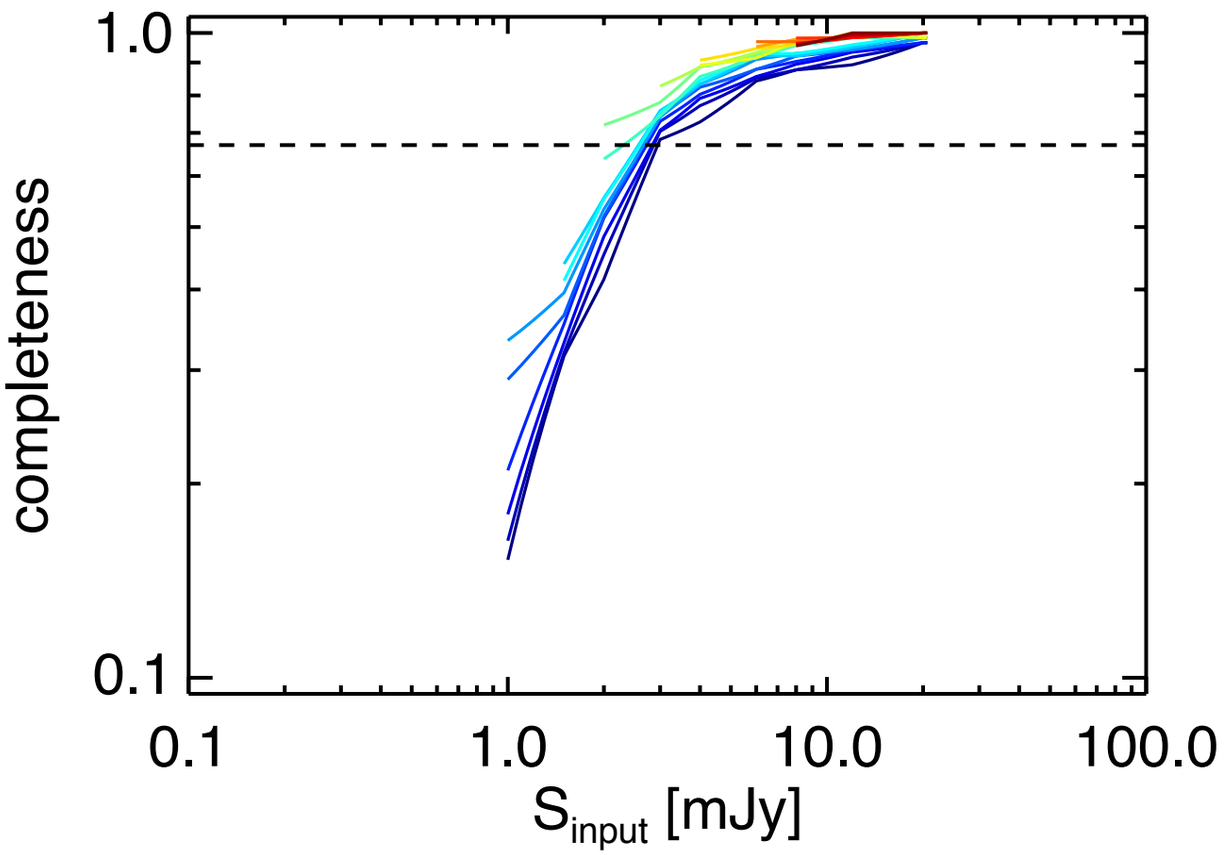
Tao WANG, CEA/Saclay

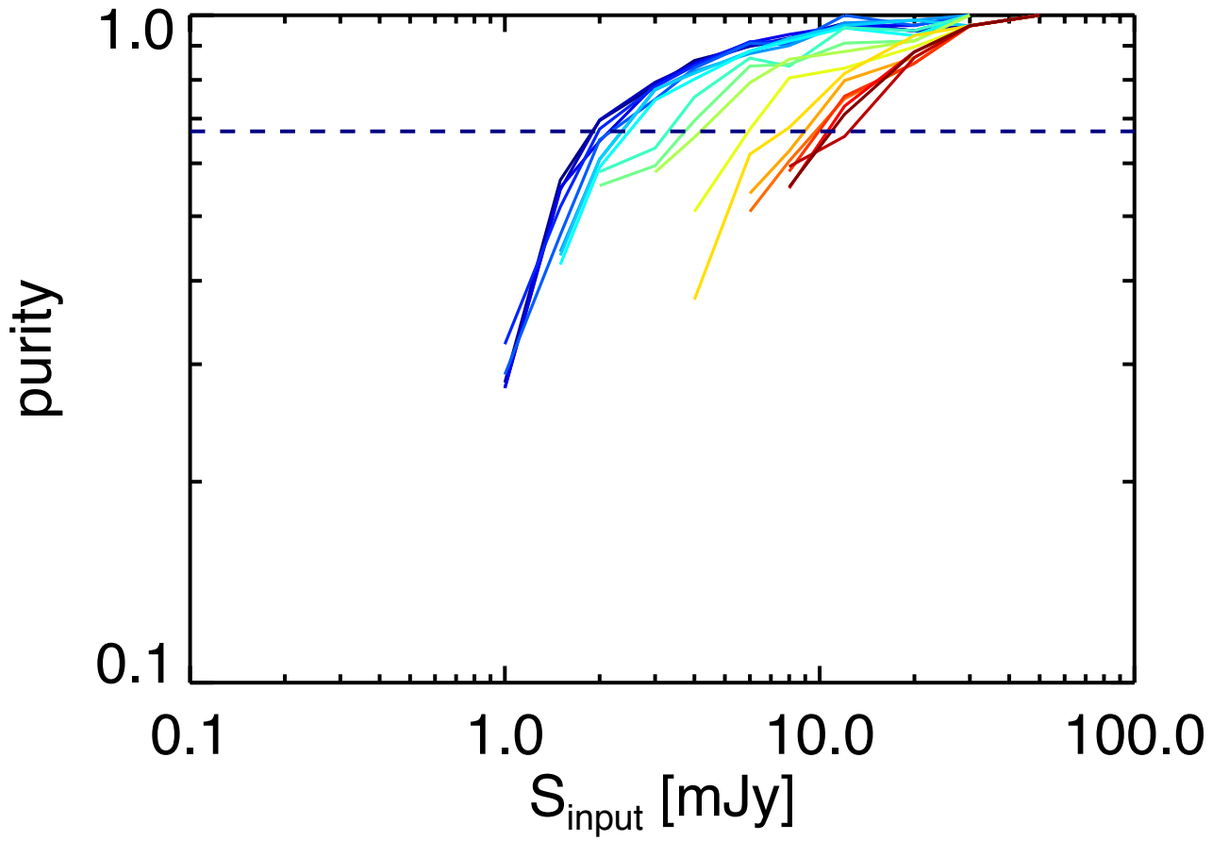


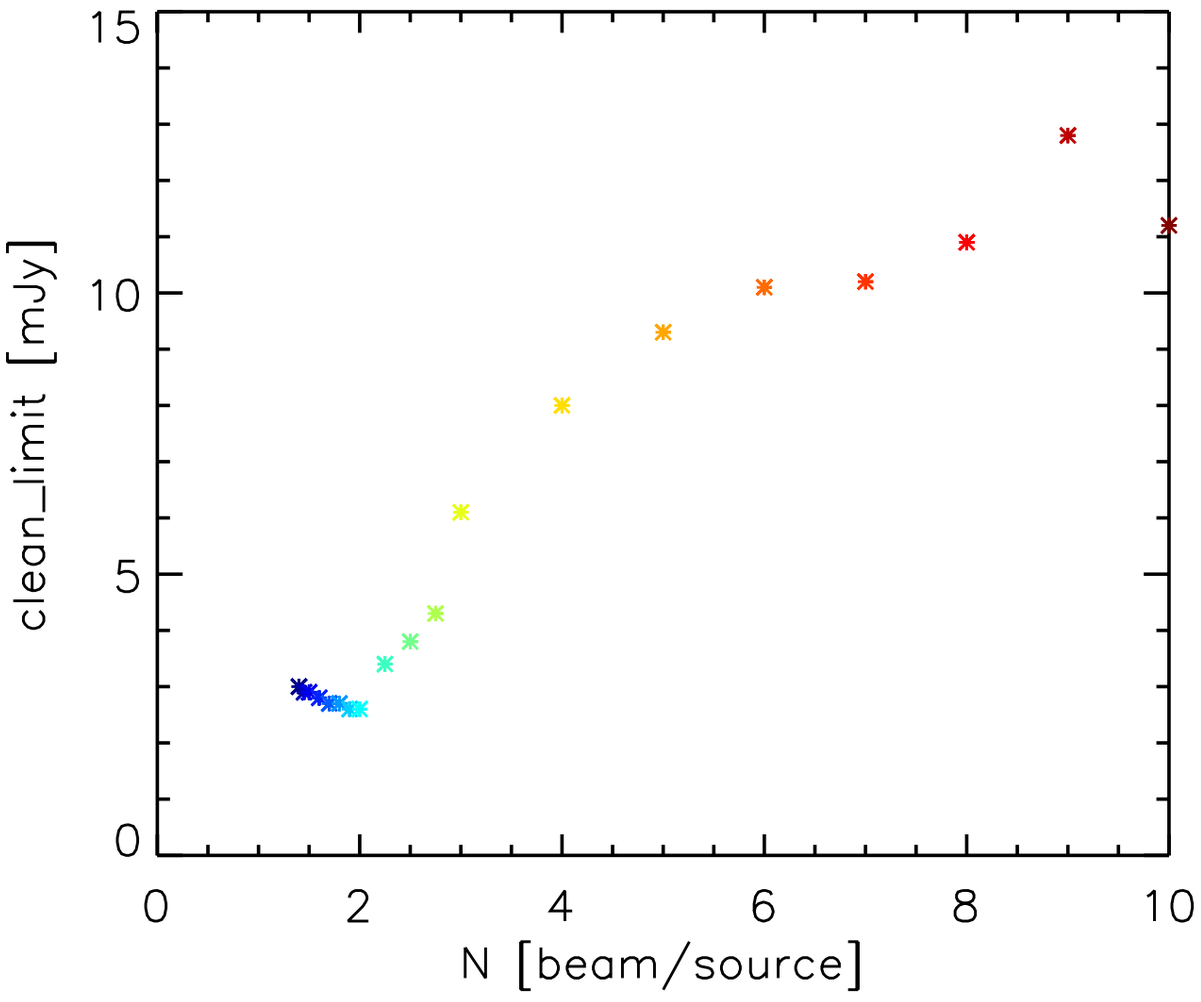
cov ~ f(sigma_Noise) * f(souce density)


S/N
2
4
6
8
10
SPIRE250
2
1
0
-1
-2
ΔS / F_in
0.1
1.0
10.0
100.0
F_in [mJy]

SPIRE 250um

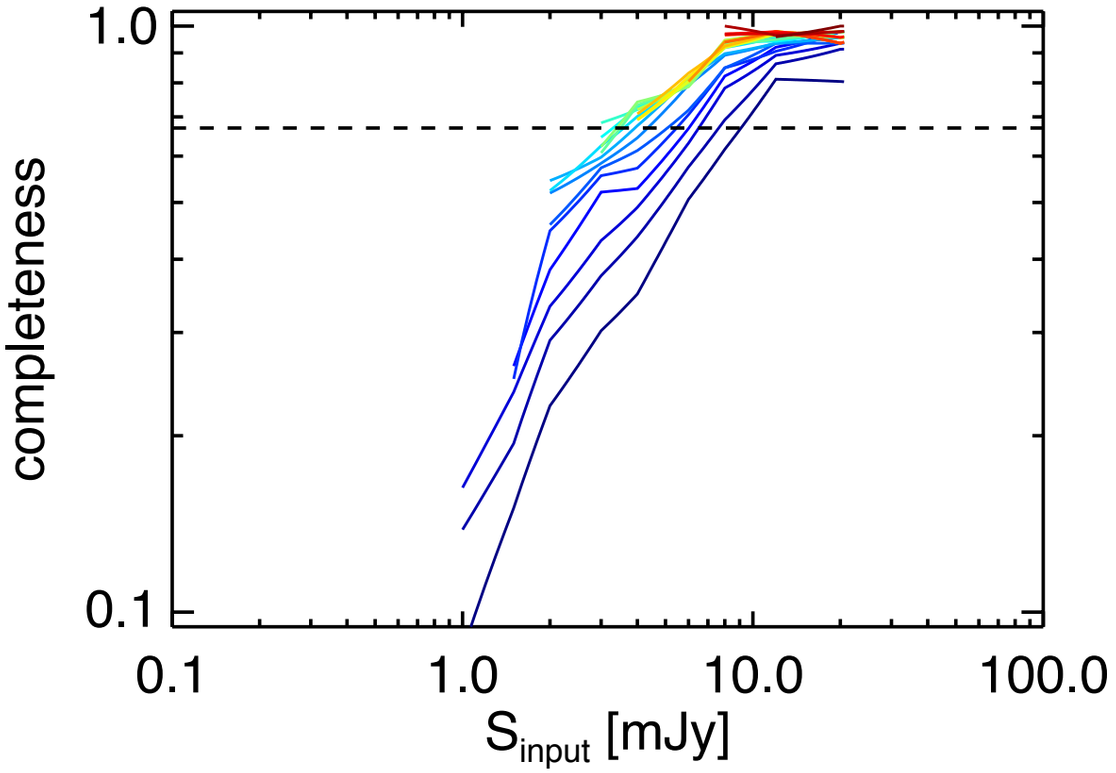

1.0
0.1
completeness
0.1
1.0
10.0
100.0
S_input [mJy]

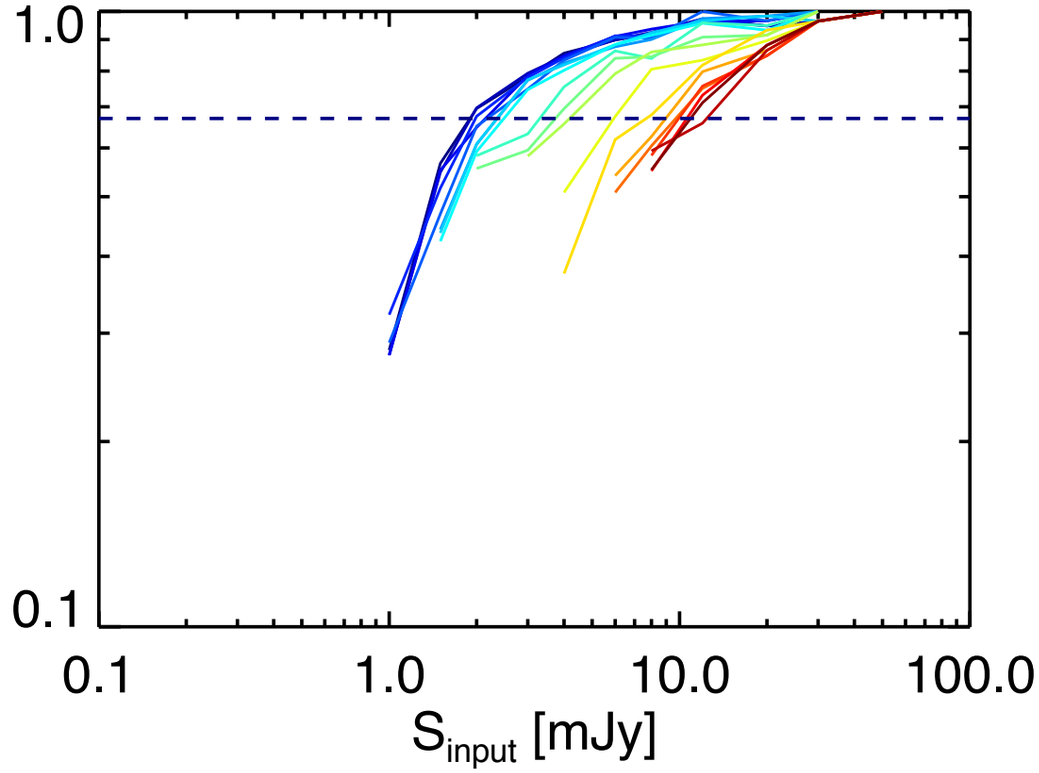

1.0
0.1
purity
0.1
1.0
10.0
100.0
S_input [mJy]

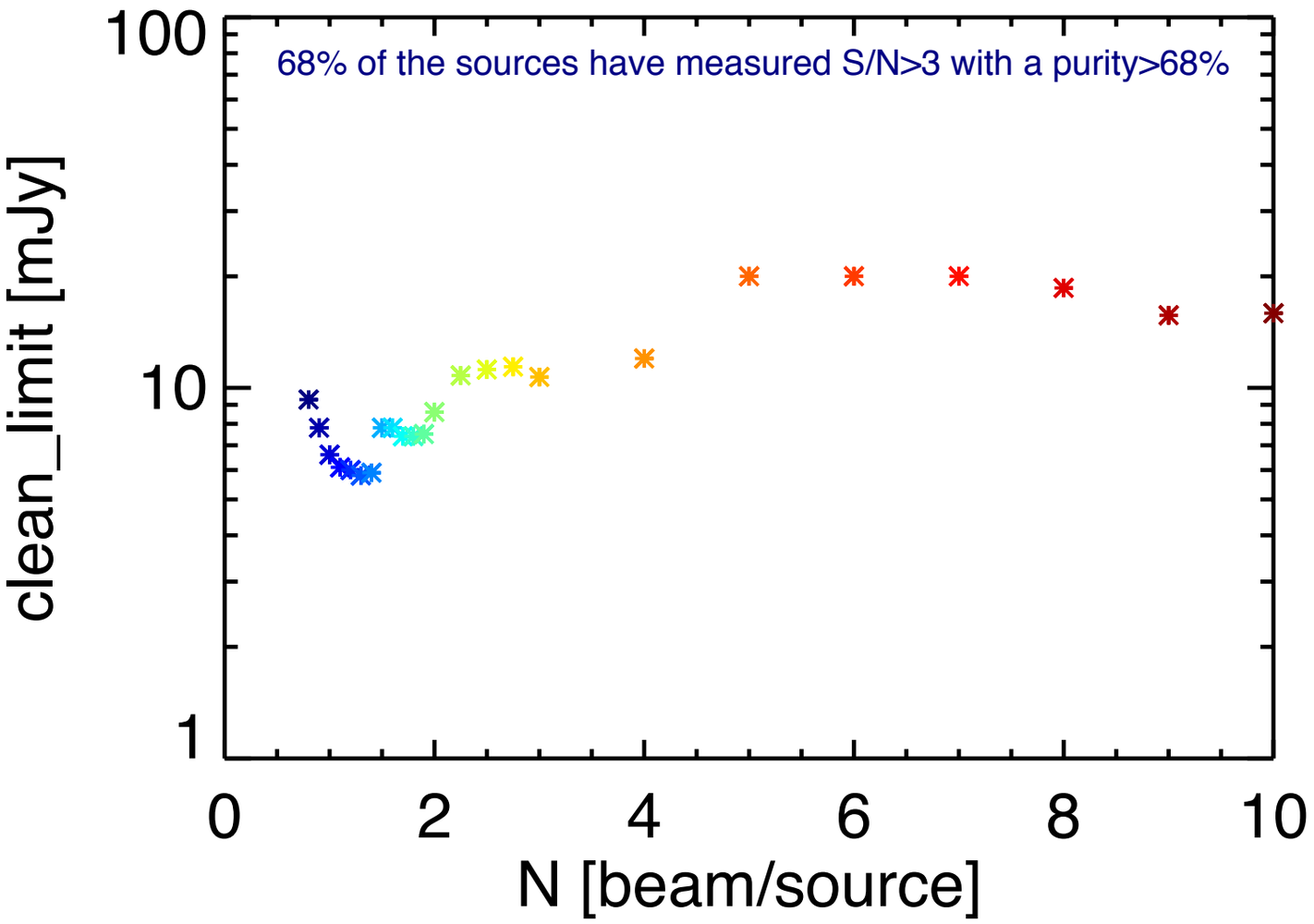


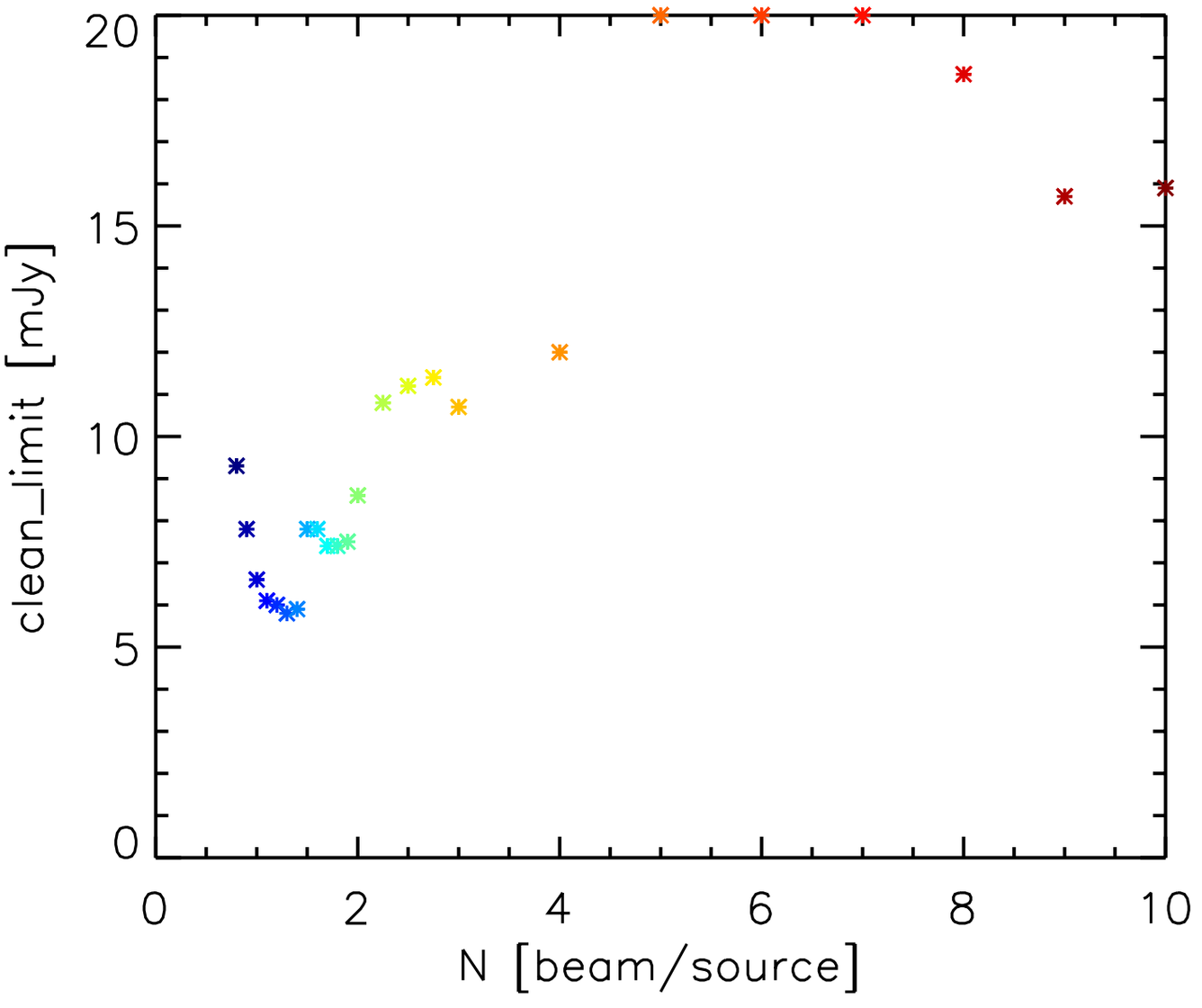
clean_limit: flux at which 68% of the sources have measured S/N > 3 with purity >68%

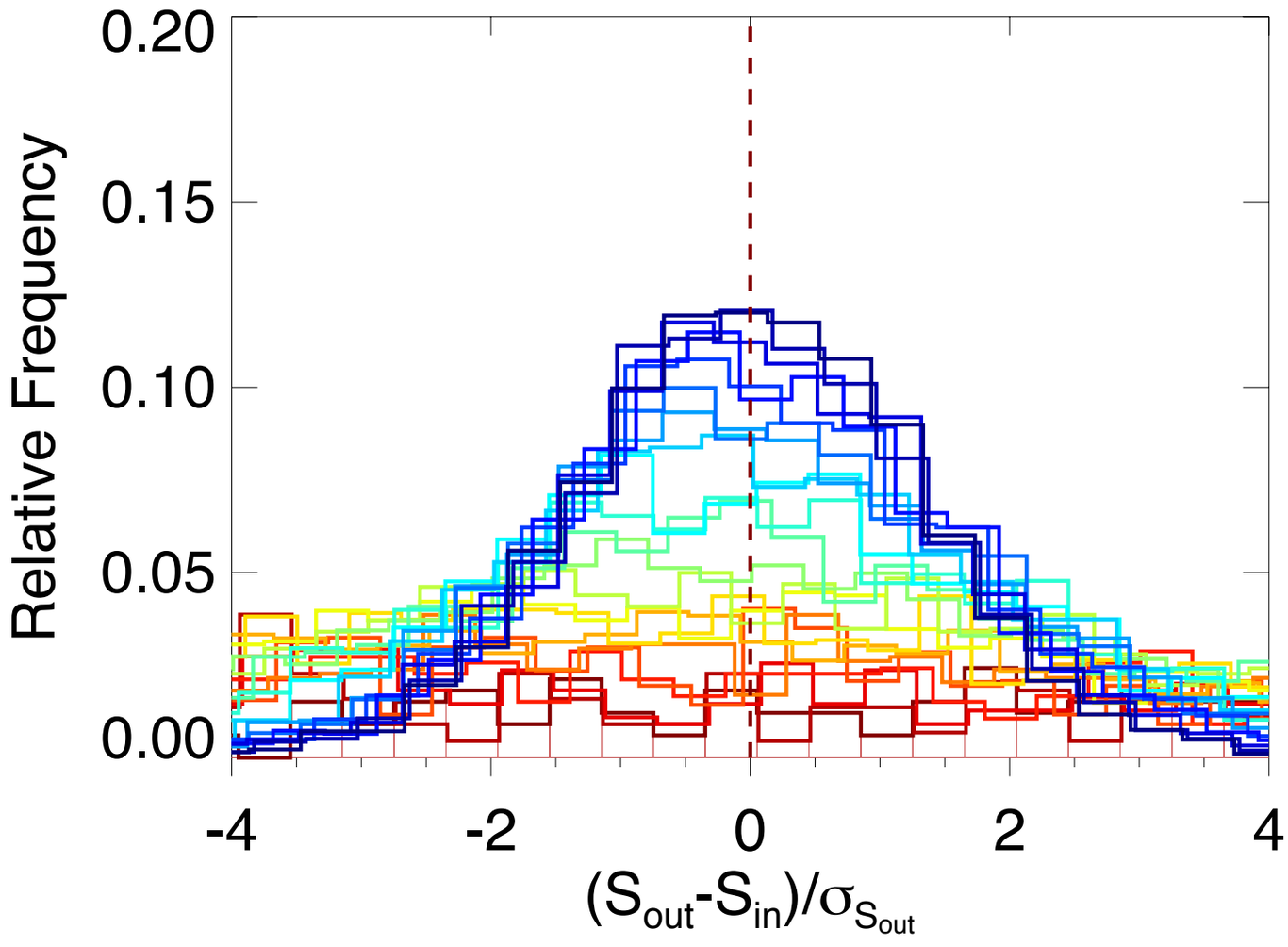
SPIRE 350um


1.0
0.1
completeness
0.1
1.0
10.0
100.0
S_input [mJy]


1.0
0.1
purity
0.1
1.0
10.0
100.0
S_input [mJy]


68% of the sources have measured S/N>3 with a purity>68%
clean_limit [mJy]
100
10
1
0
2
4
6
8
10
N [beam/source]

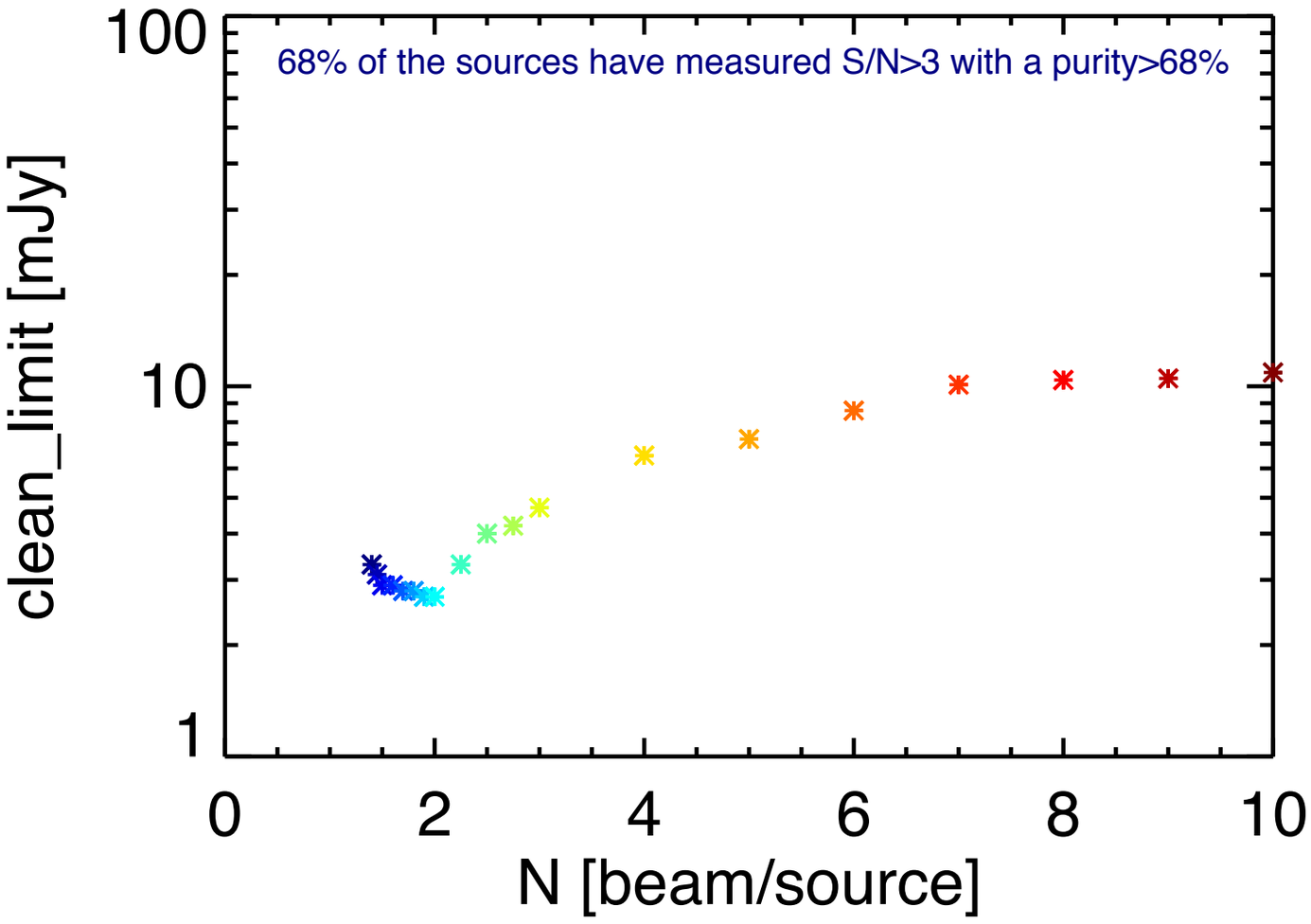

20
15
10
5
0
clean_limit [mJy]
0
2
4
6
8
10
N [beam/source]


0.20
0.15
0.10
0.05
0.00
Relative Frequency
-4
-2
0
2
4
$(S_{out}-S_{in})/\sigma_{S_{out}}$

more than that

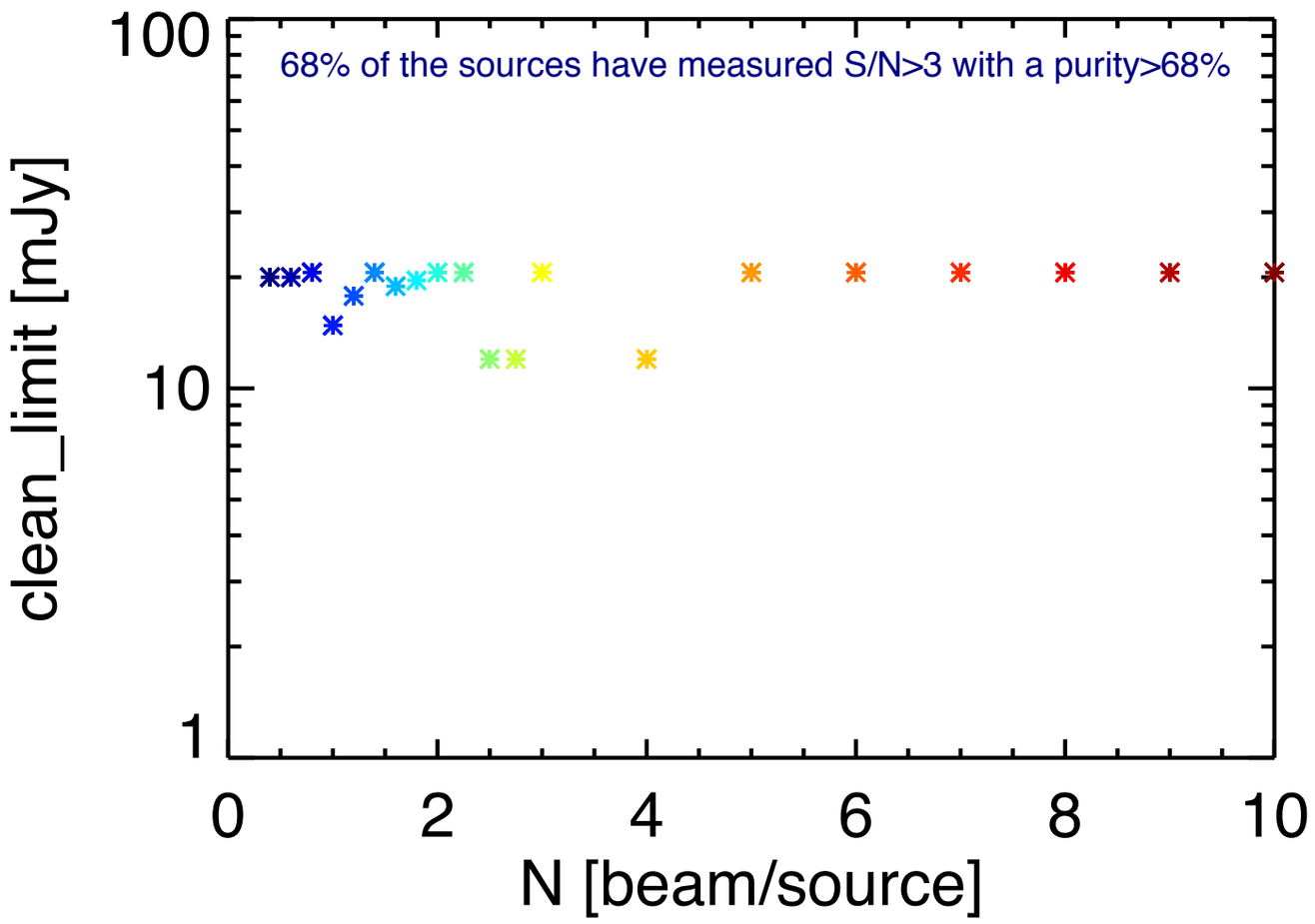
Koryo's talk

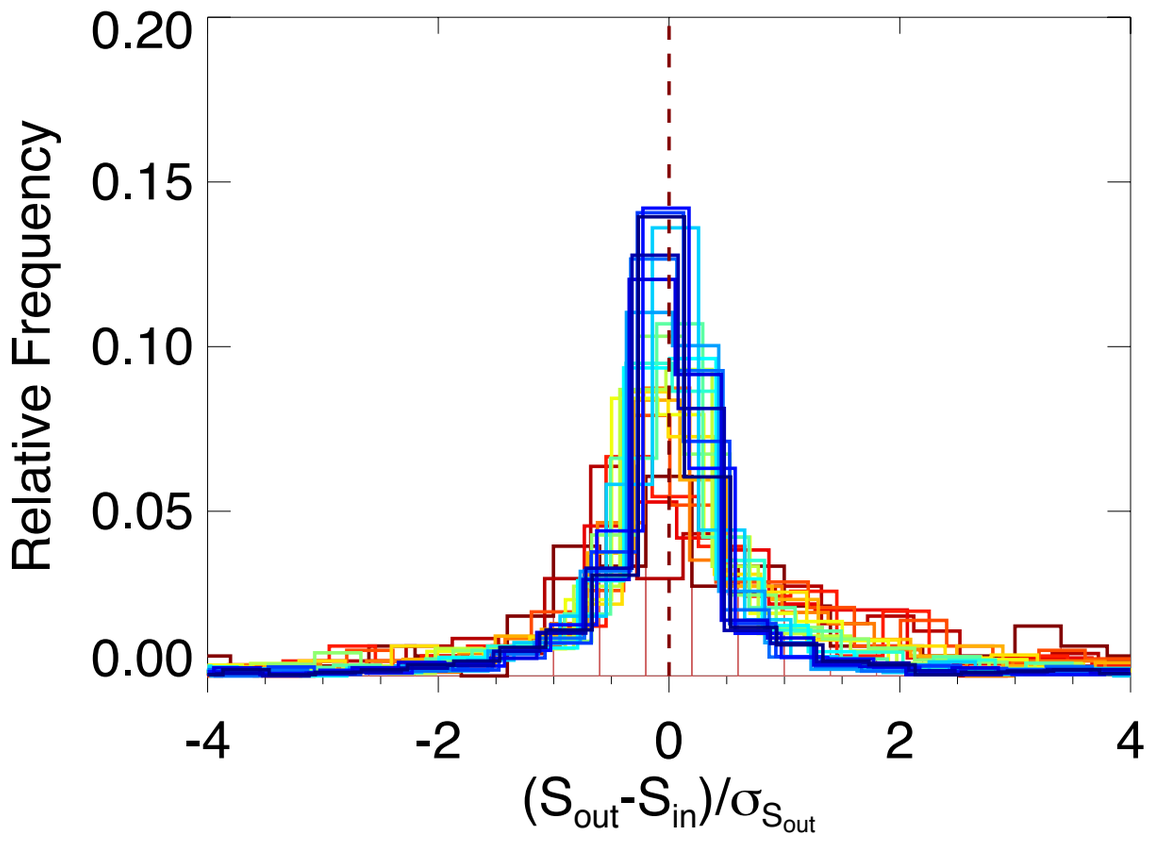
white noise

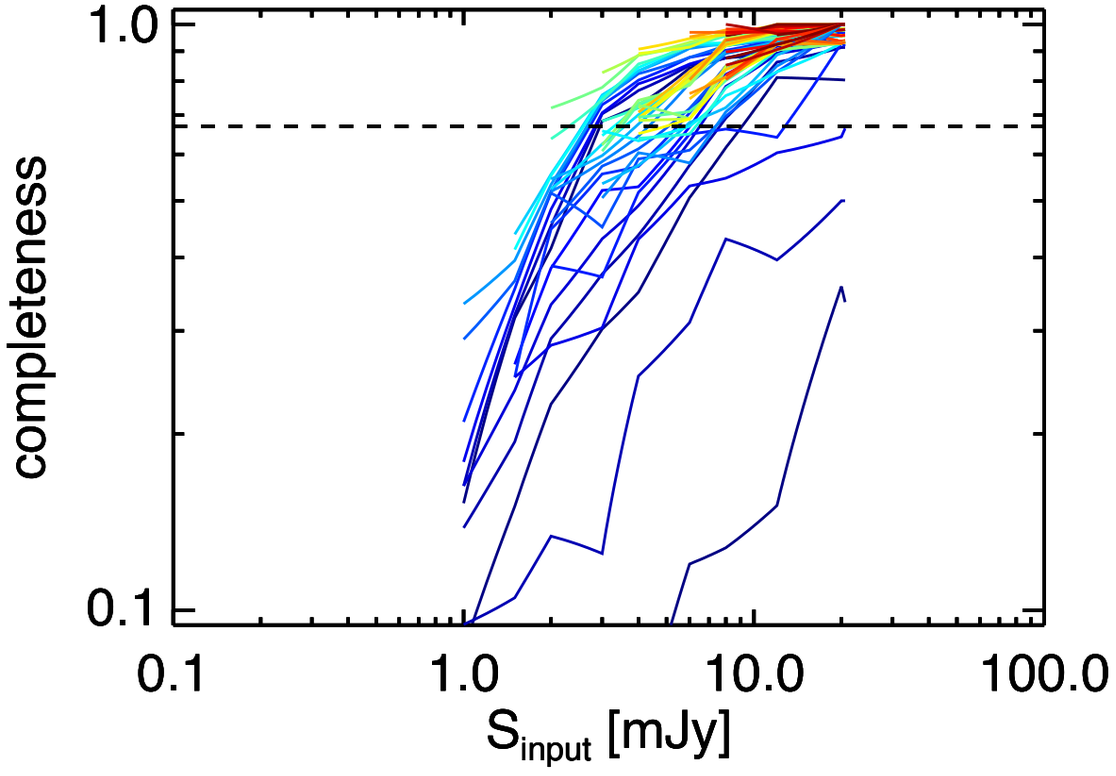

68% of the sources have measured S/N>3 with a purity>68%
clean_limit [mJy]
100
10
1
0
2
4
6
8
10
N [beam/source]

more realistic simulated images

CANDELS(+MIPS) → Herschel(+SCUBA2+ALMA)


68% of the sources have measured S/N>3 with a purity>68%
clean_limit [mJy]
N [beam/source]
100
10
1
0
2
4
6
8
10


0.20
0.15
0.10
0.05
0.00
Relative Frequency
-4
-2
0
2
4
$(S_{out}-S_{in})/\sigma_{S_{out}}$


1.0
0.1
completeness
0.1
1.0
10.0
100.0
S_input [mJy]