HAM iminuit & Multinest Results

Jiaxi

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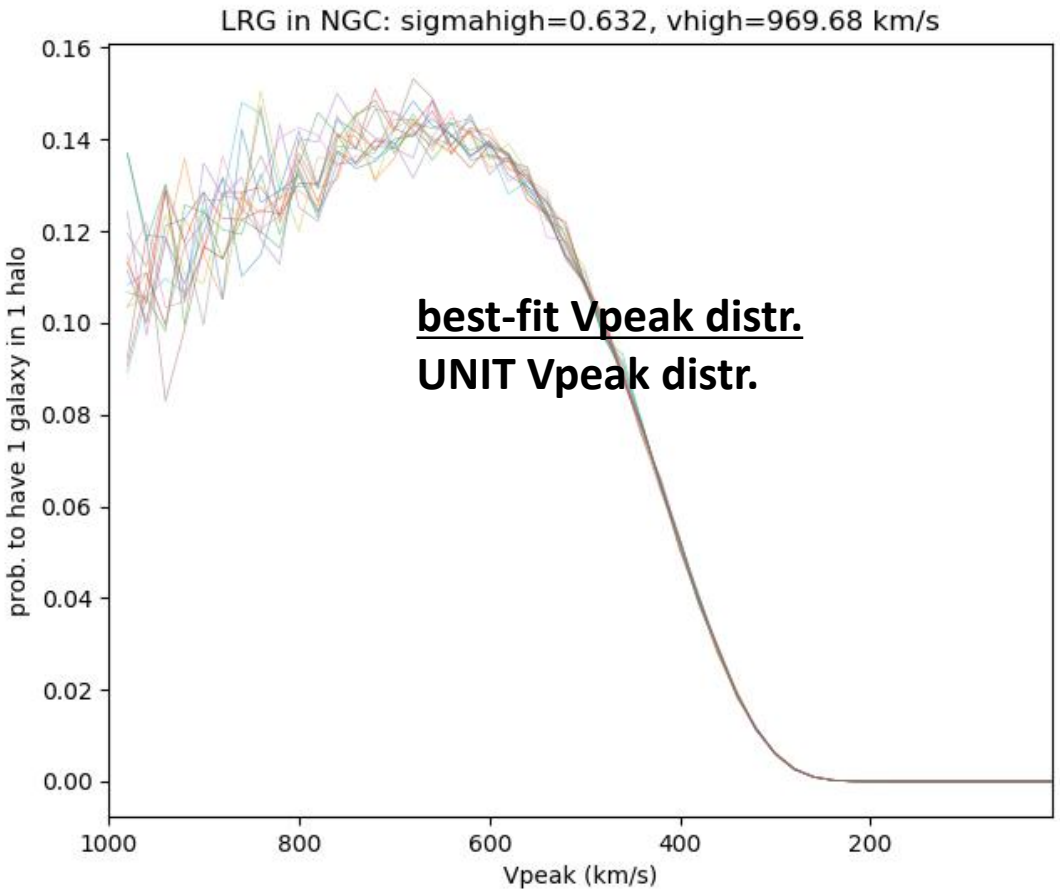
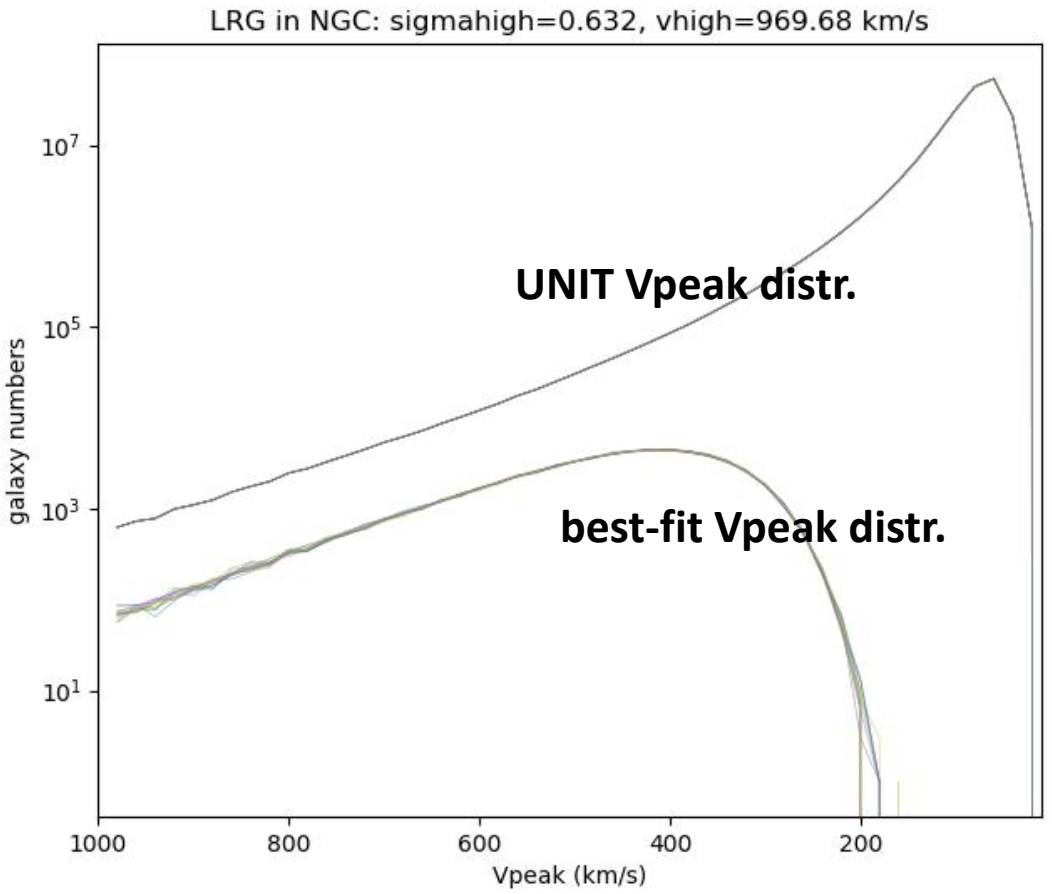
NOTE：

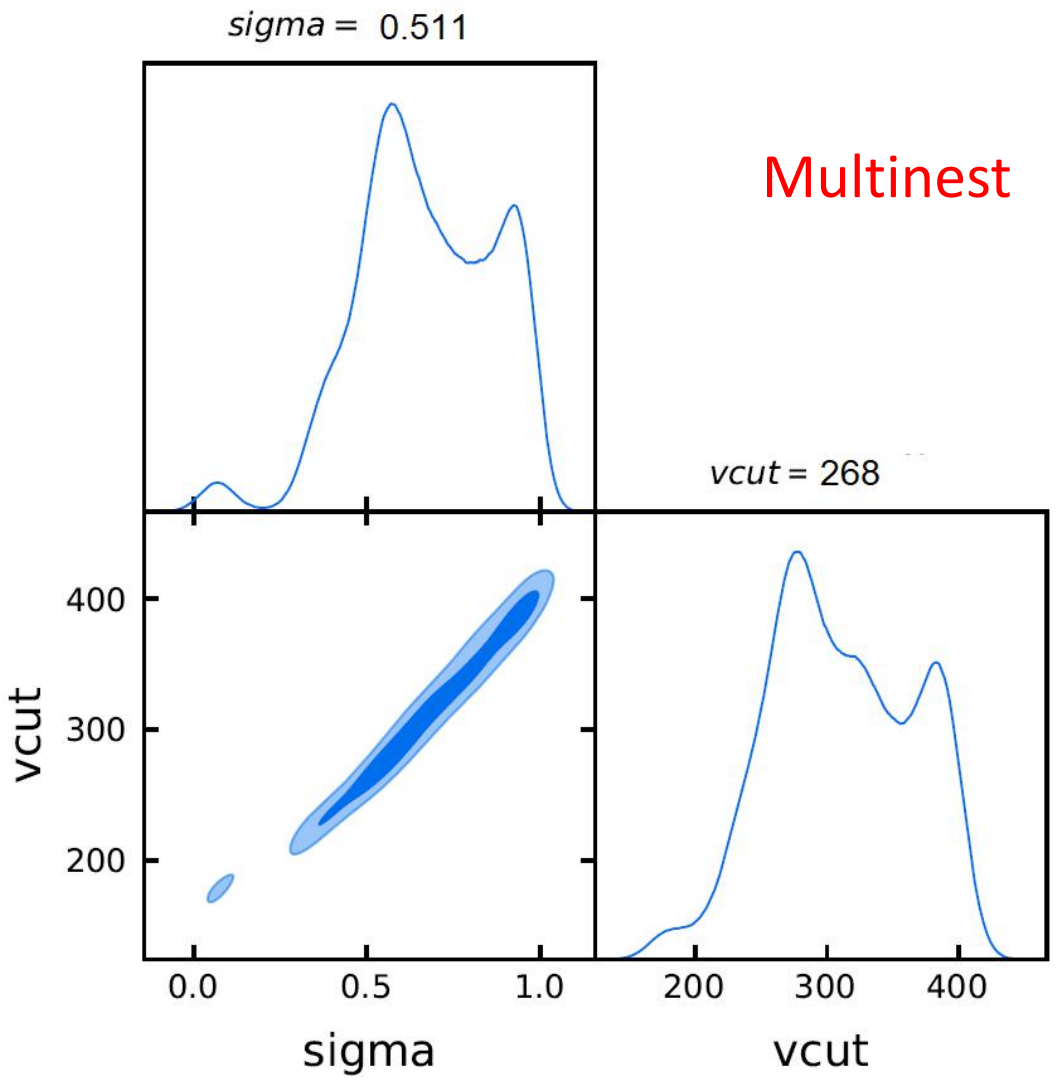
- The parameters are sigma for scattering Vpeak; vcut for cutting large scattering Vpeak end; prior: sigma [0,1]; vcut [100,1000]
- Multinest results are analyzer.get_bestfit()['parameters'], errors are not provided because they may not be reliable
- Vpeak distribution functions present the average of 15 realisations with the best fitting results

NOTE：


LRG in NGC: sigmahigh=0.632, vhigh=969.68 km/s
prob. to have 1 galaxy in 1 halo
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
1000
800
600
400
200
Vpeak (km/s)
best-fit Vpeak distr.
UNIT Vpeak distr.


LRG in NGC: sigmahigh=0.632, vhigh=969.68 km/s
galaxy numbers
10^7
10^5
10^3
10^1
1000
800
600
400
200
Vpeak (km/s)
UNIT Vpeak distr.
best-fit Vpeak distr.

ELG NGC: parameters



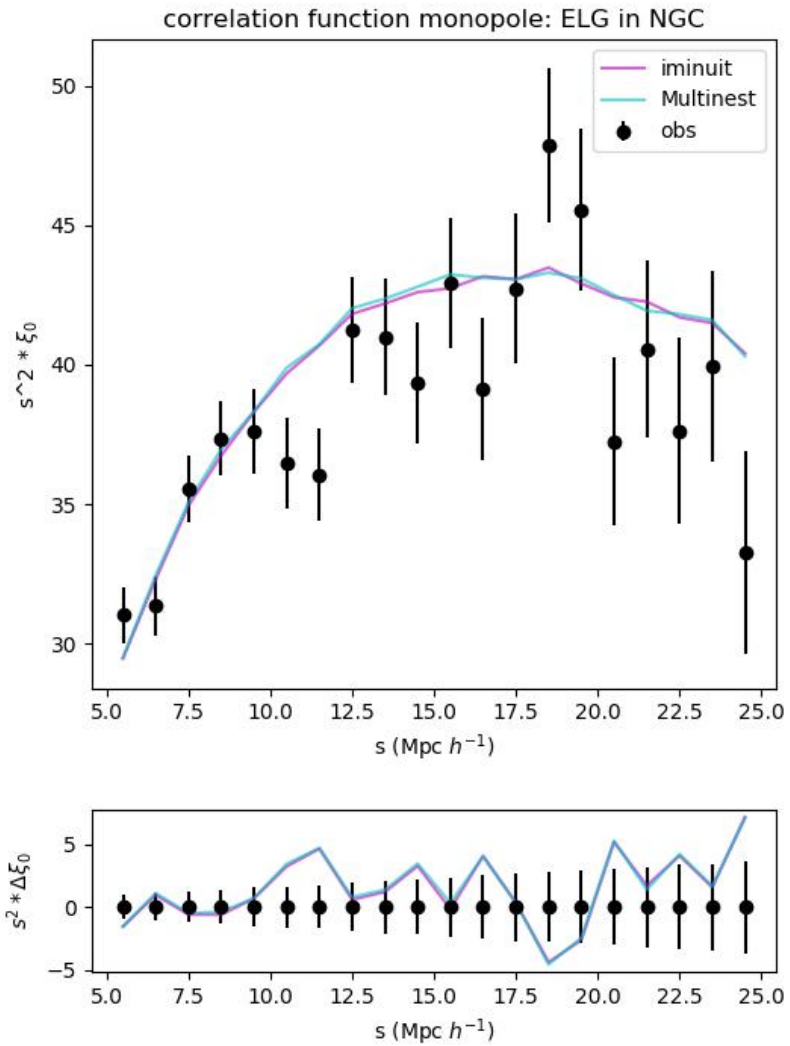
Multinest

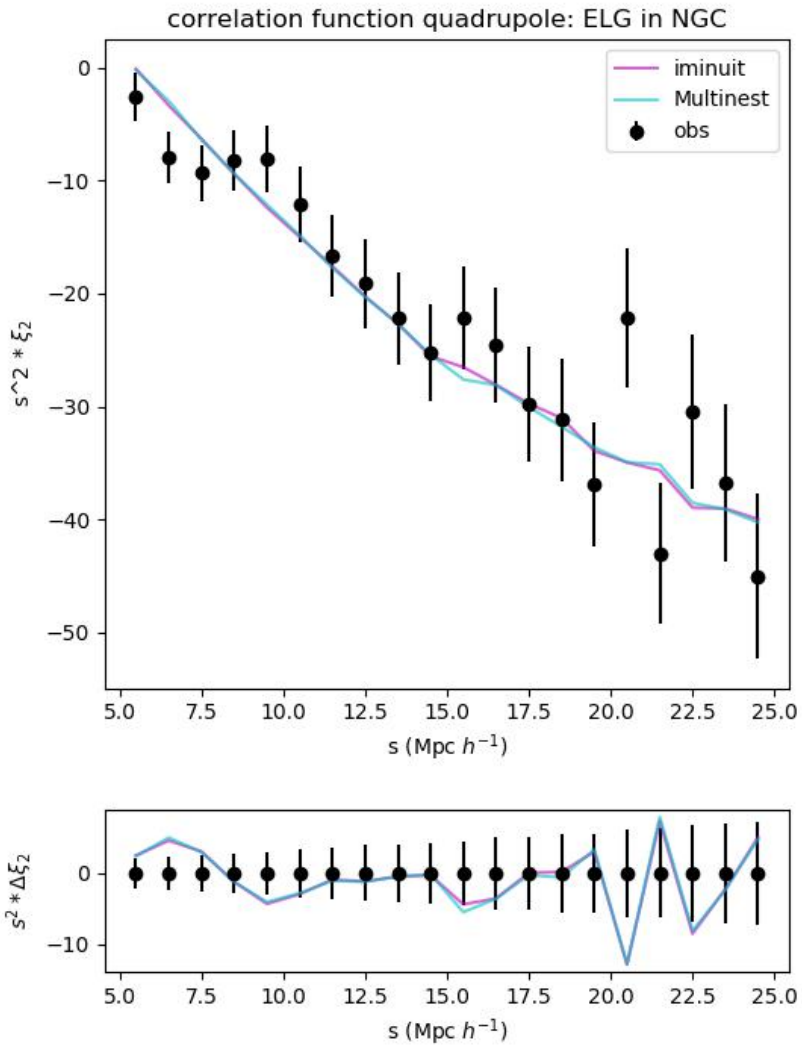
iminuit

$sigma = 0.506$

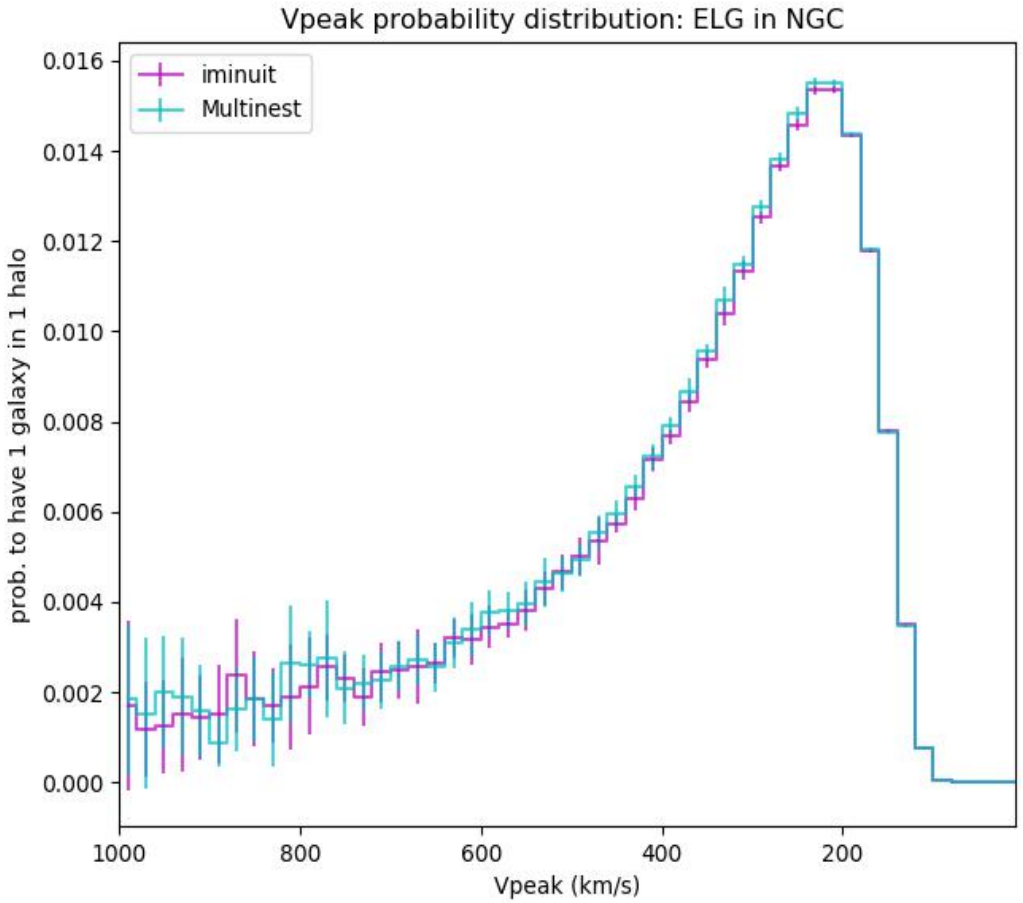
$Vcut = 266 km/s$

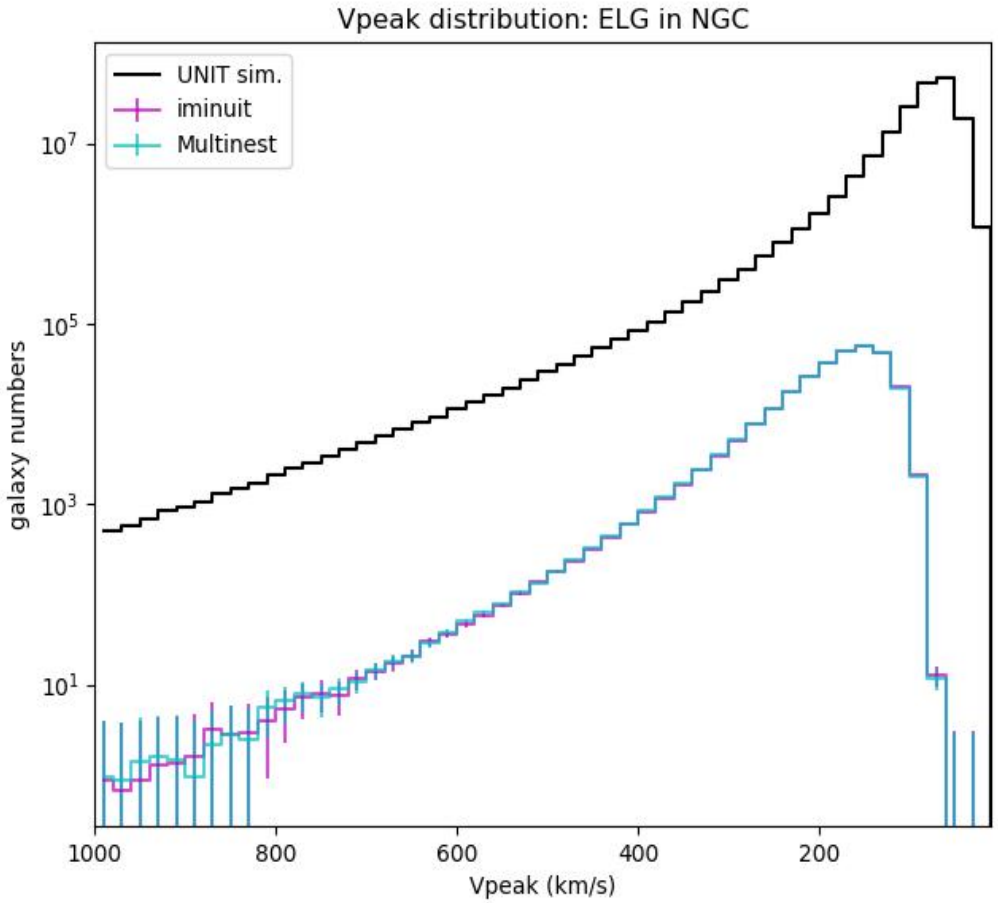
ELG NGC: correlation function



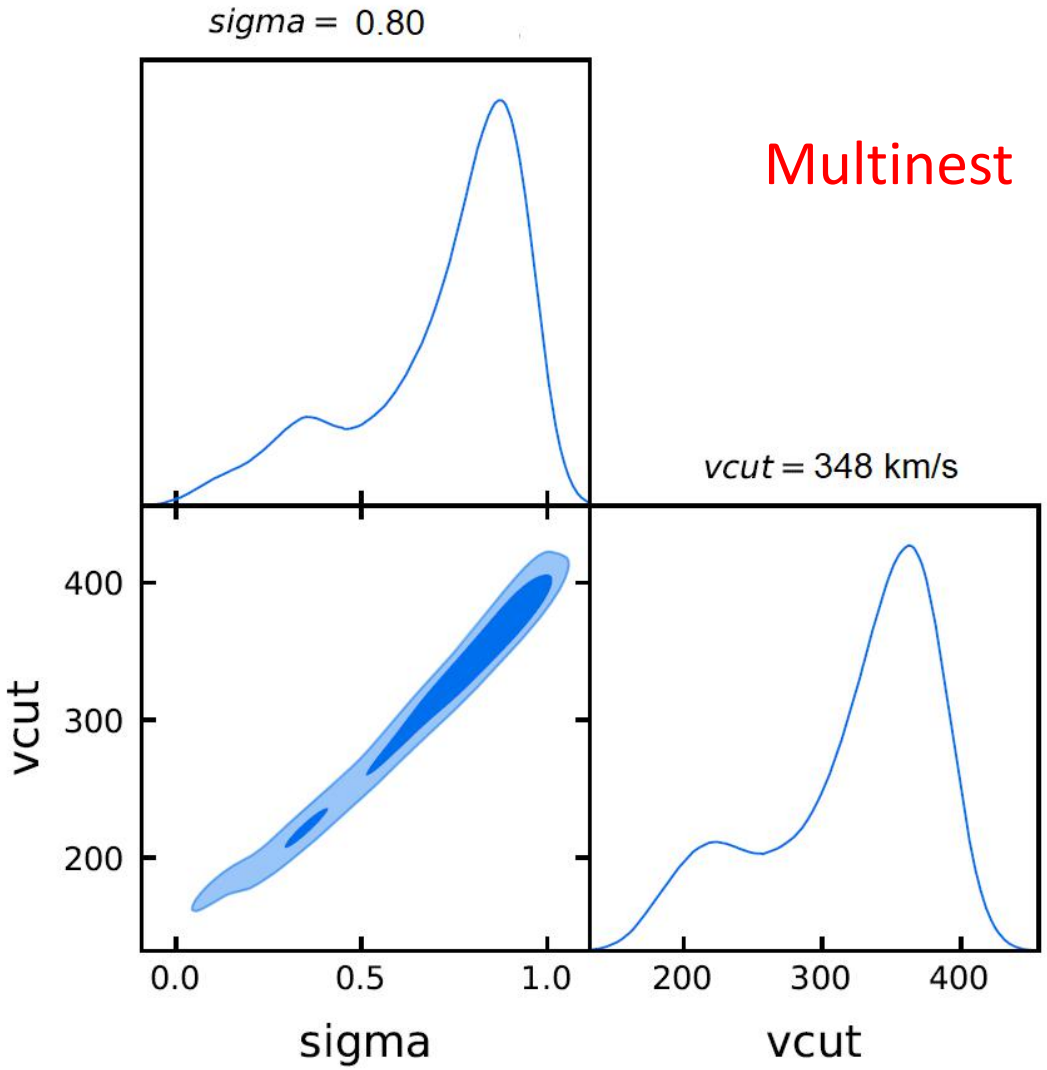


ELG NGC: Vpeak distribution





ELG SGC: parameters



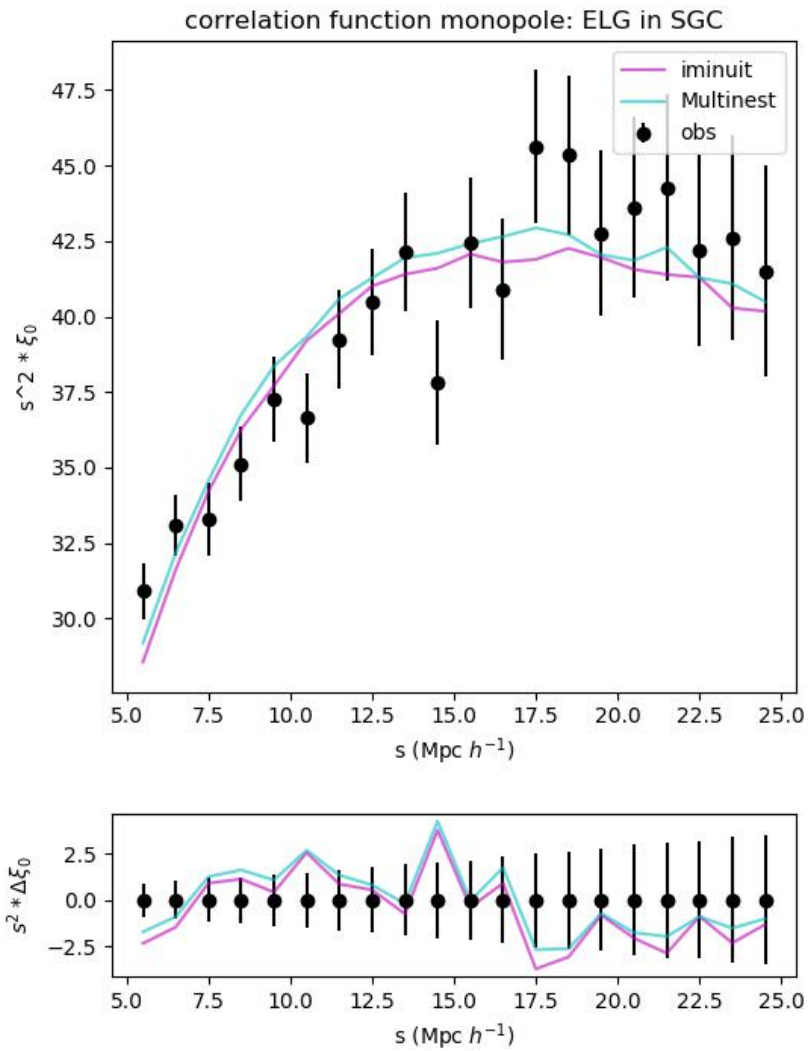
Multinest

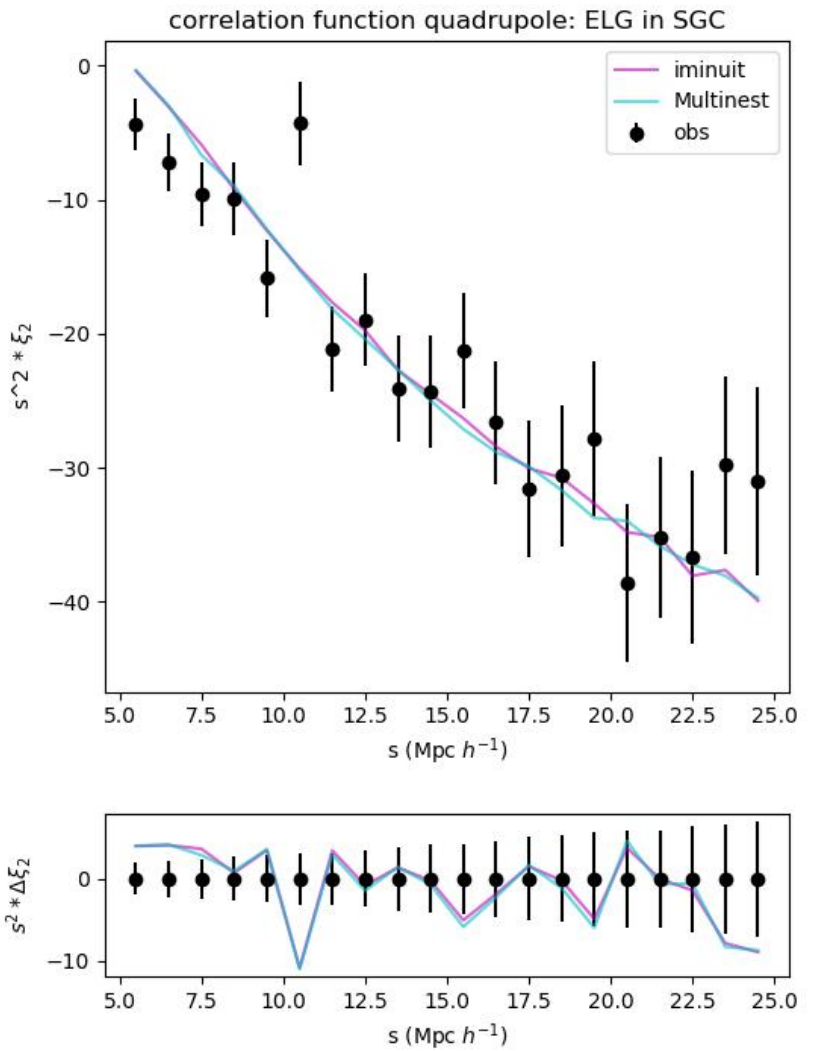
iminuit

$$sigma = 0.509$$

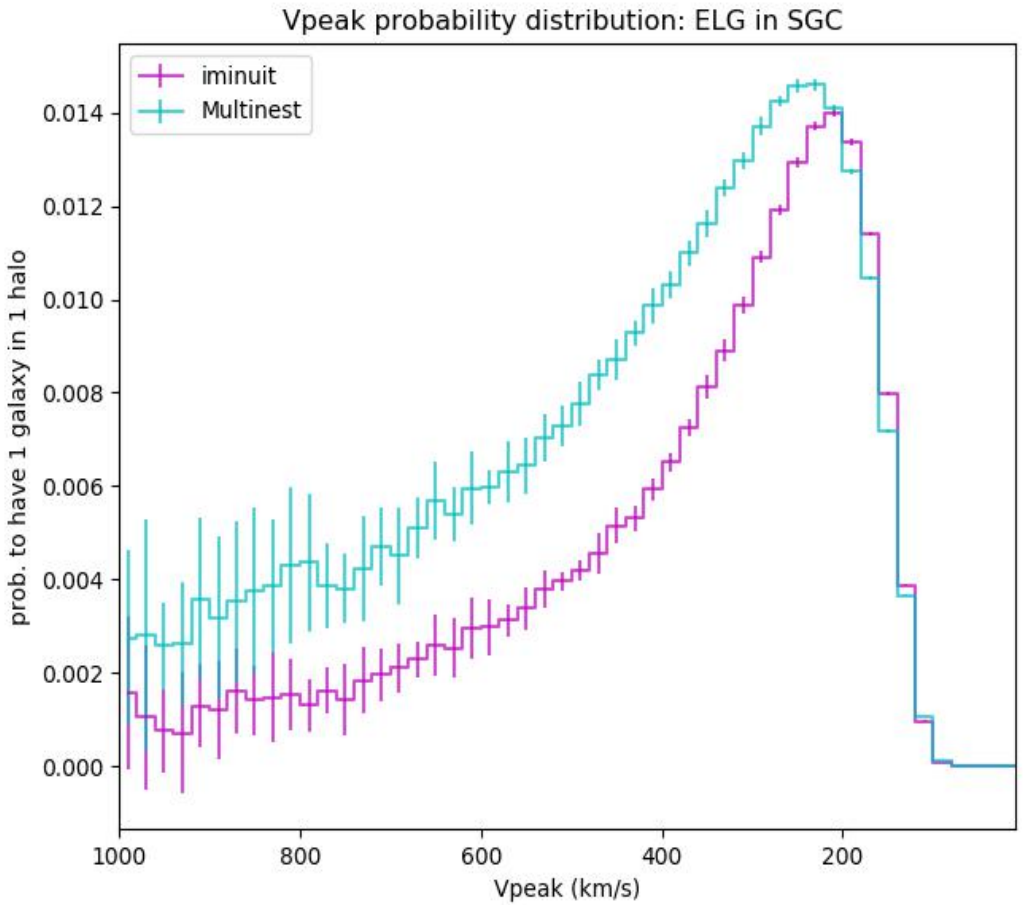
$$Vcut = 260 km/s$$

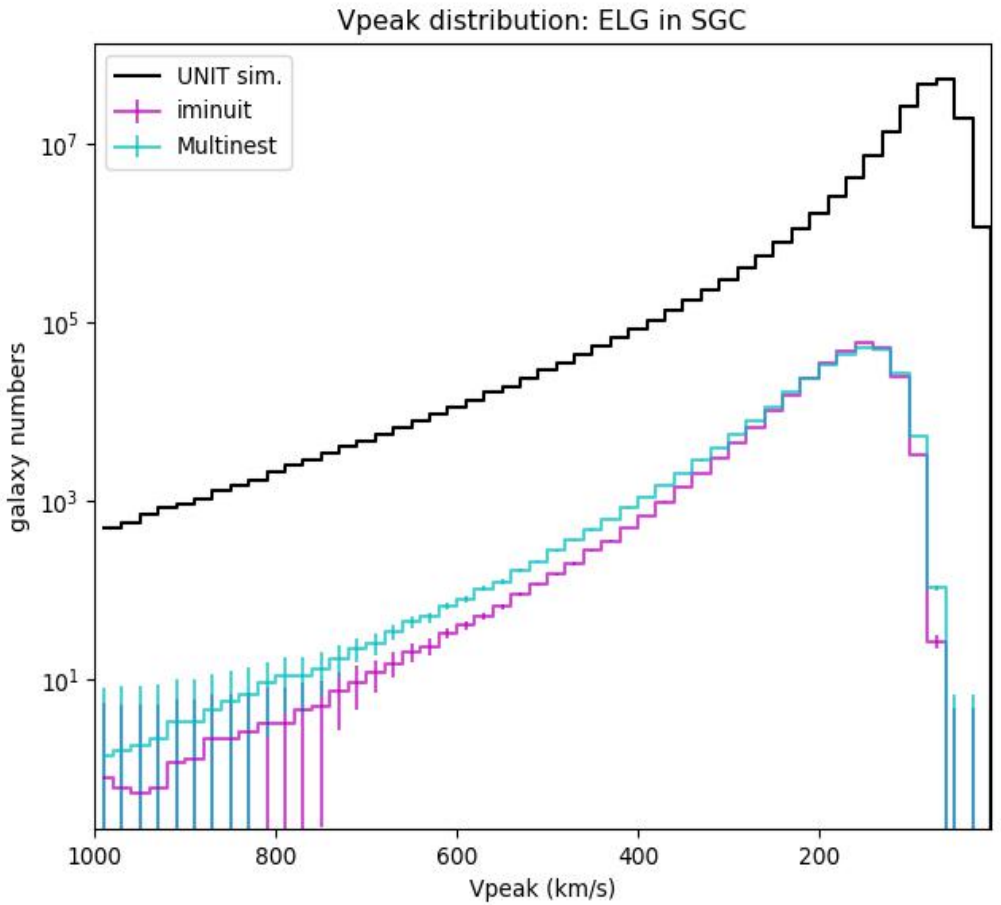
ELG SGC: correlation function



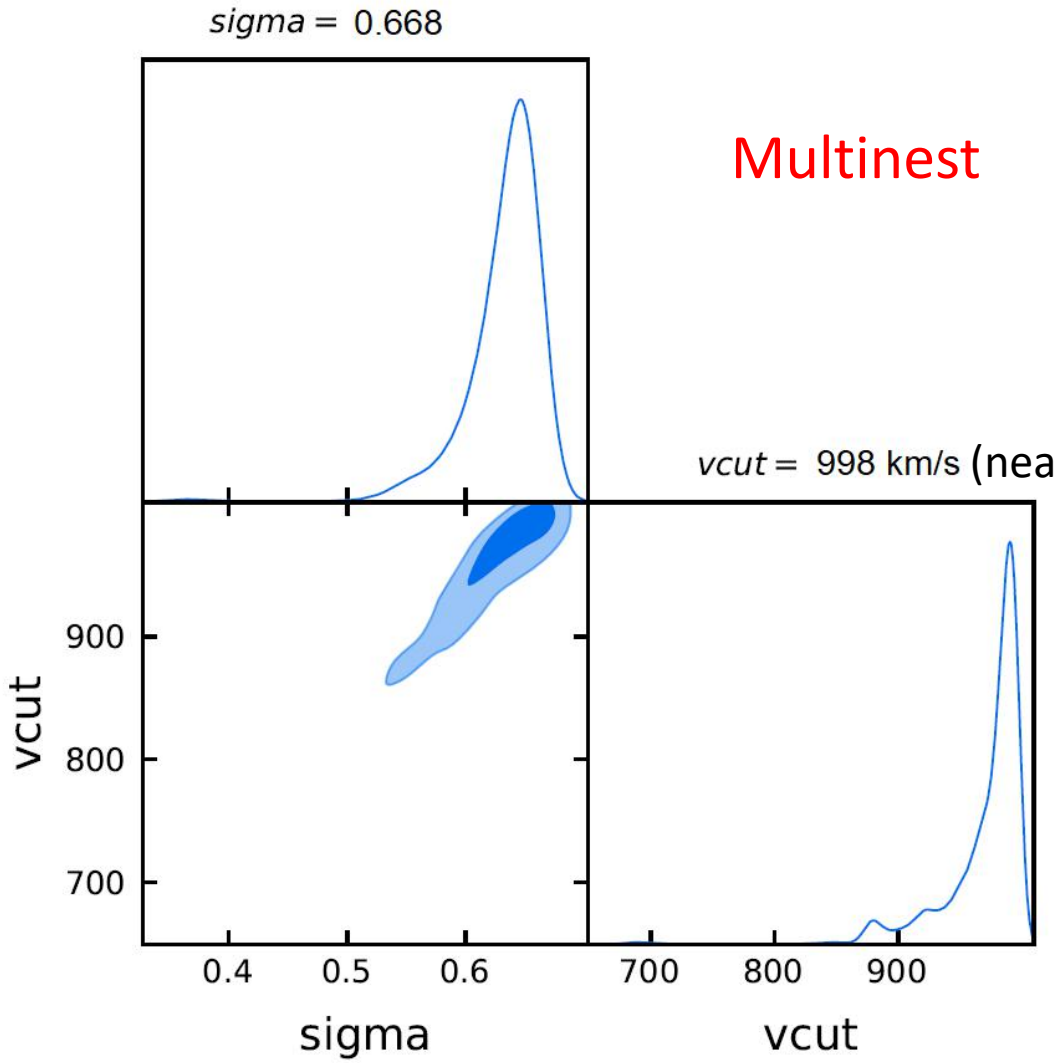


ELG SGC: Vpeak distribution





LRG NGC: parameters



(near the prior boundary)

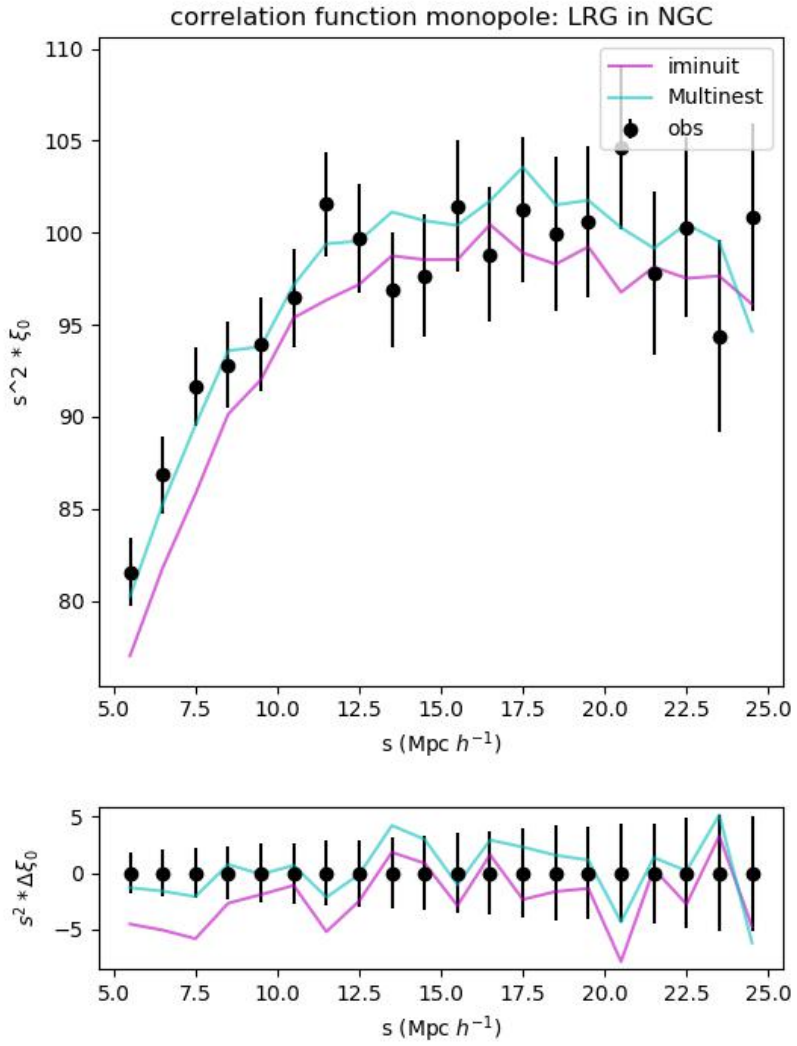
Multinest

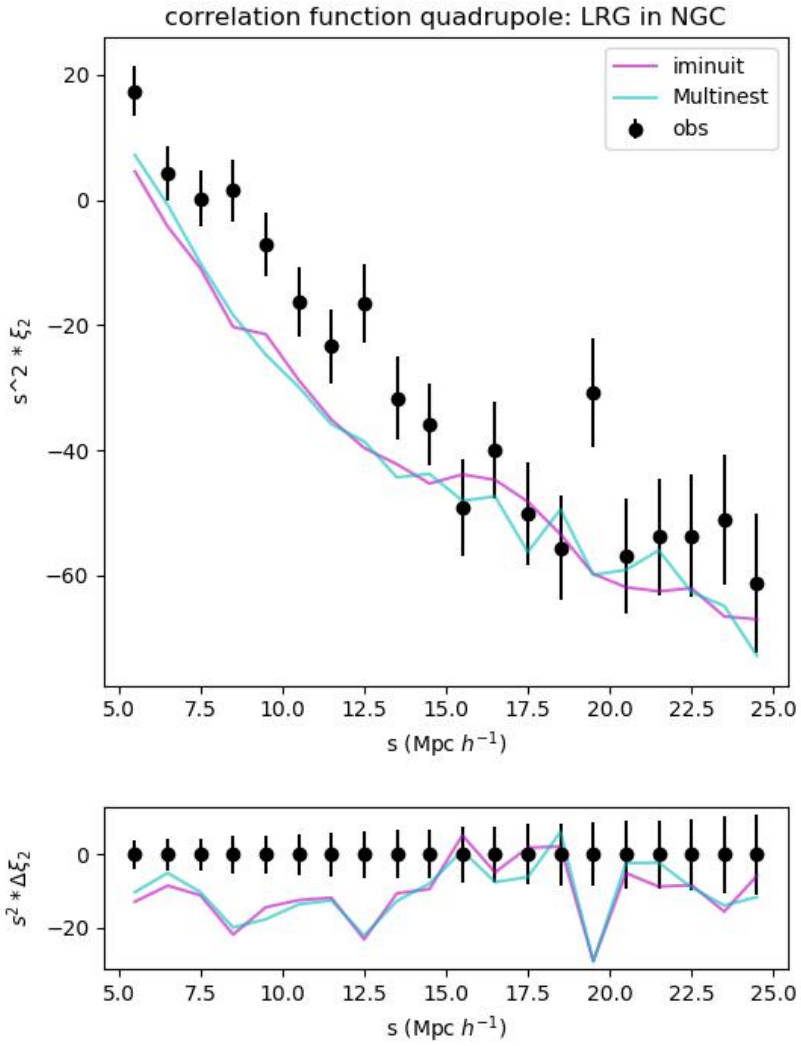
iminuit

$$sigma = 0.463$$

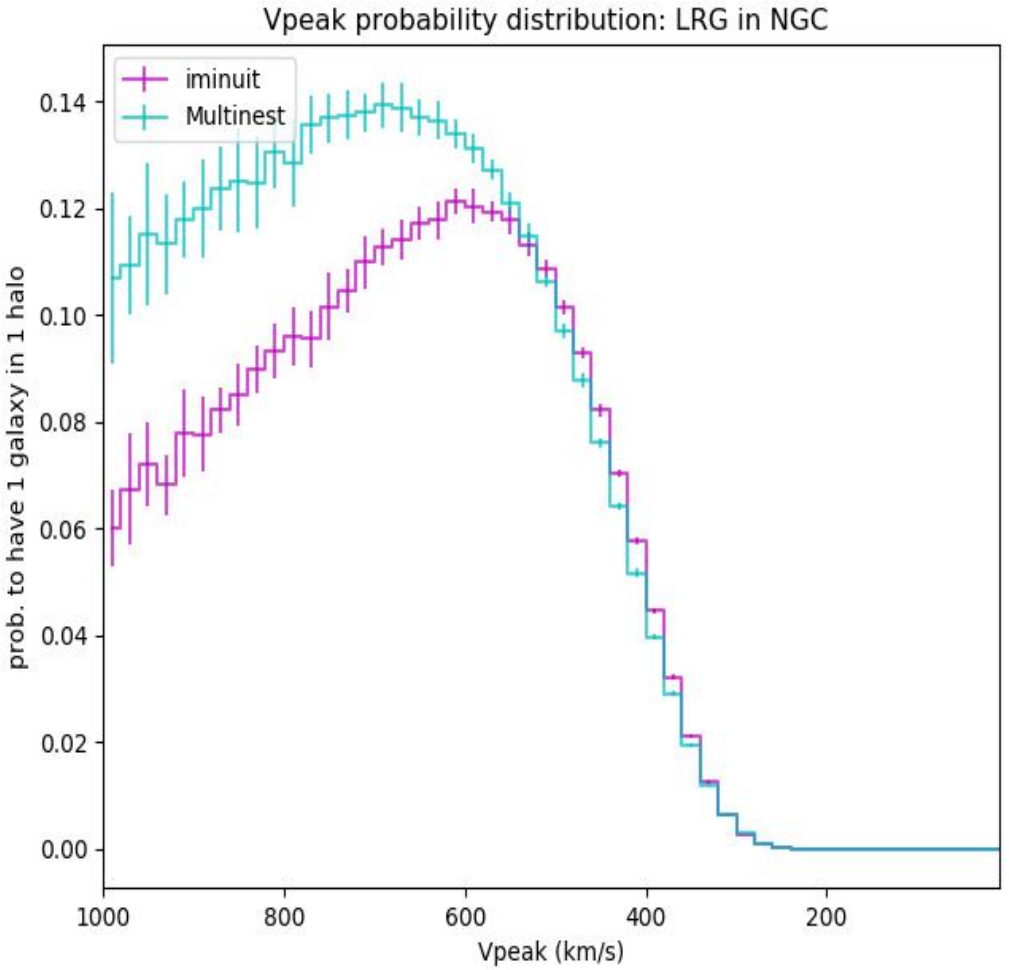
$$Vcut = 748 km/s$$

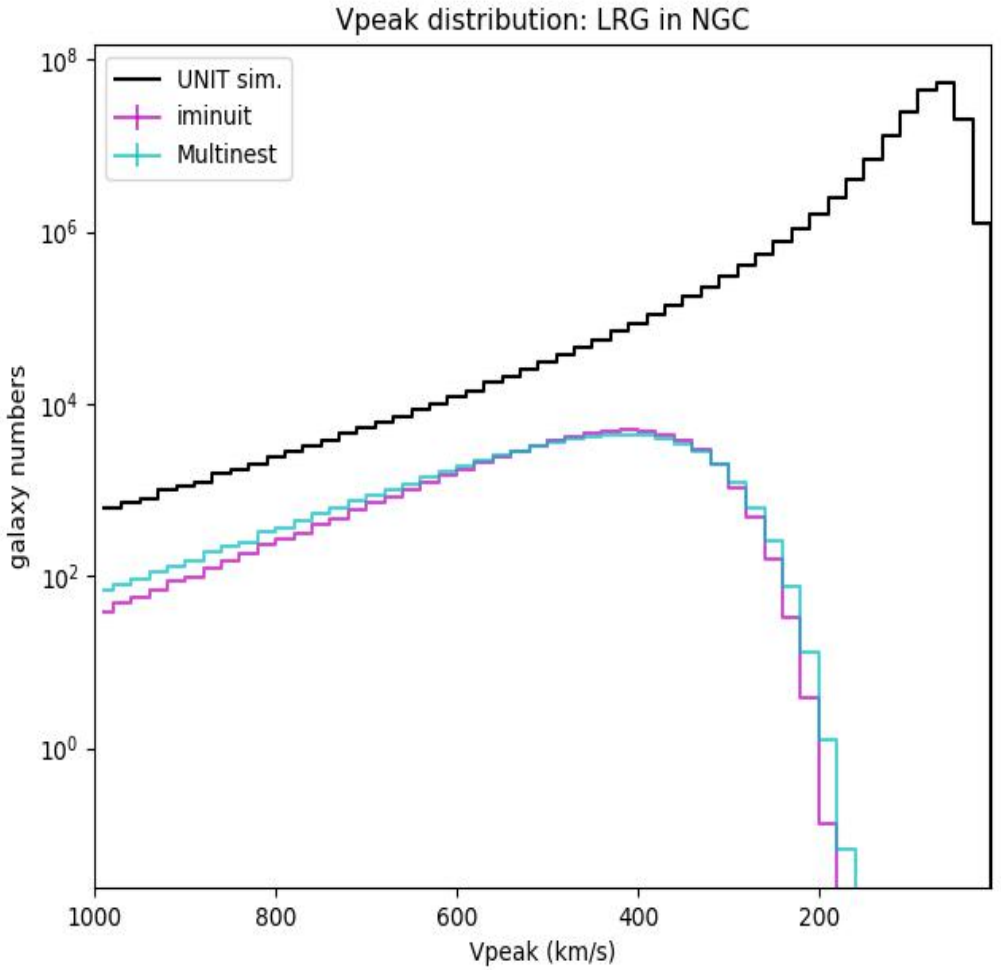
LRG NGC: correlation function



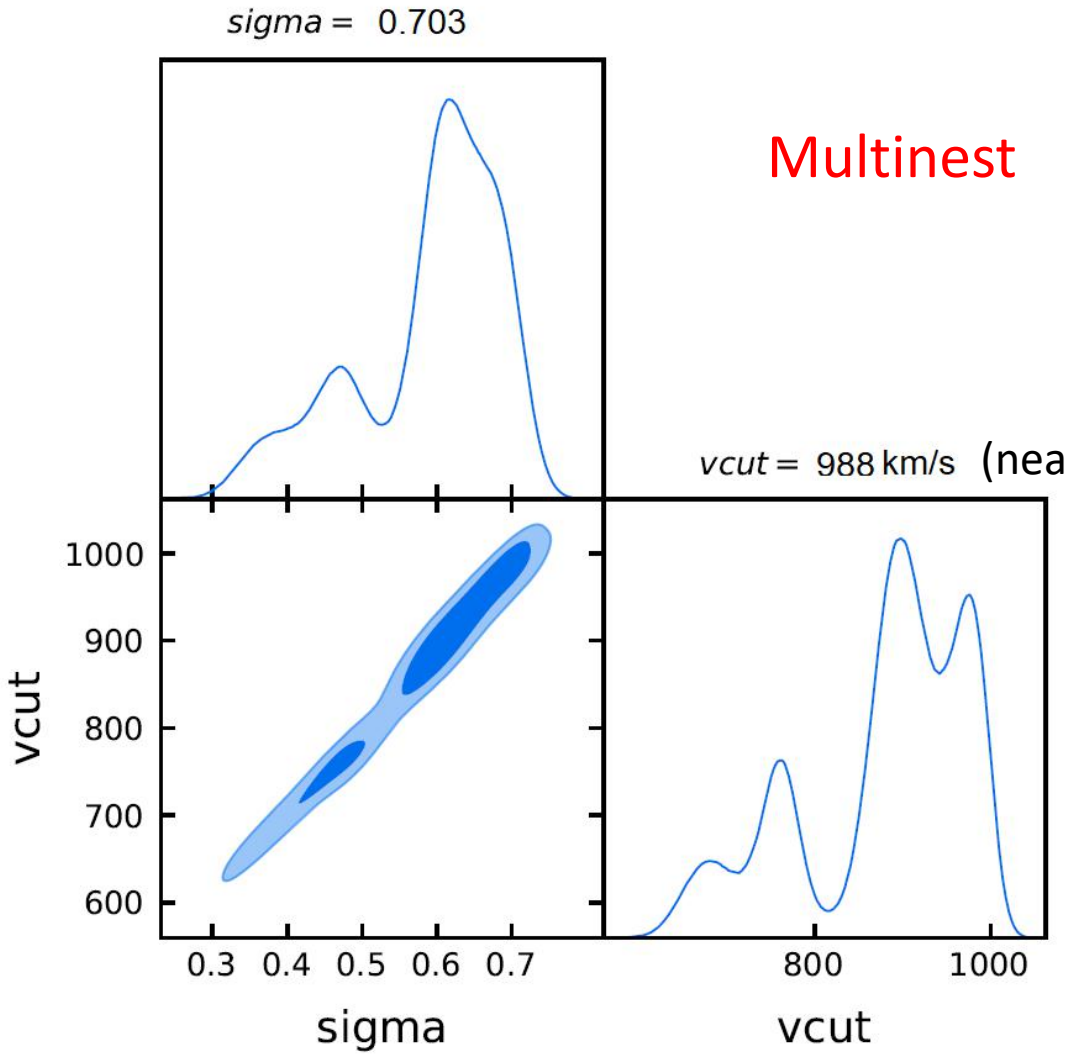


LRG NGC: Vpeak distribution





LRG SGC: parameters



Multinest

(near the prior boundary)

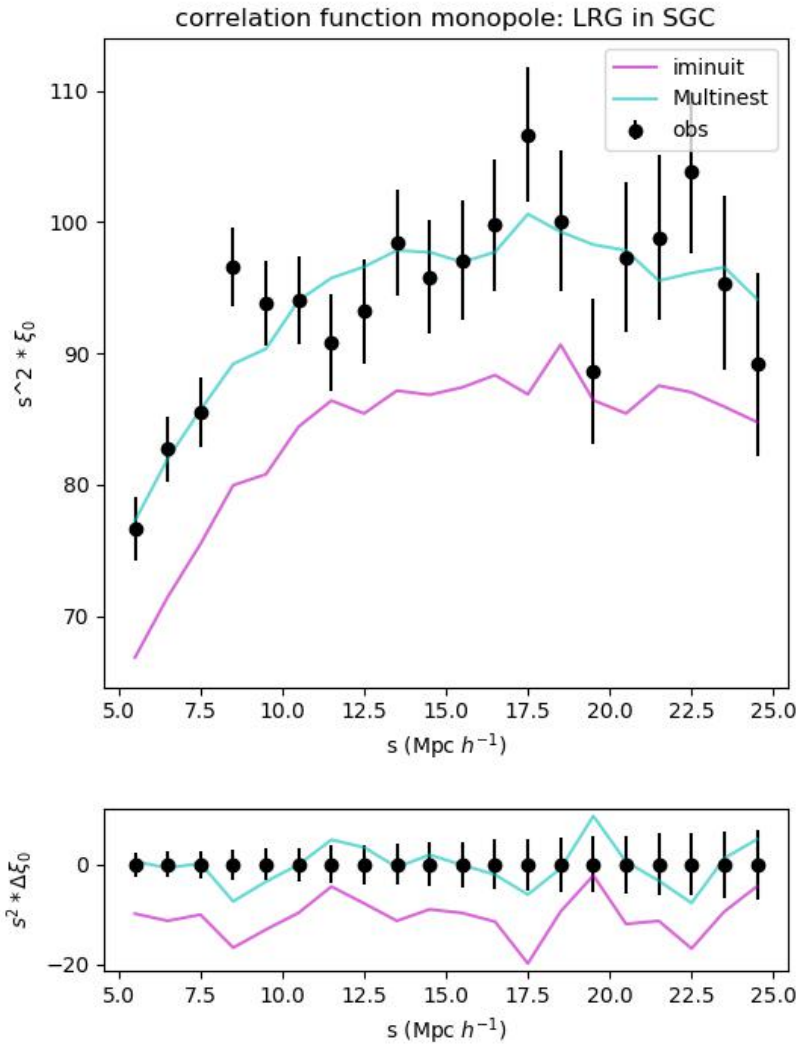
iminuit

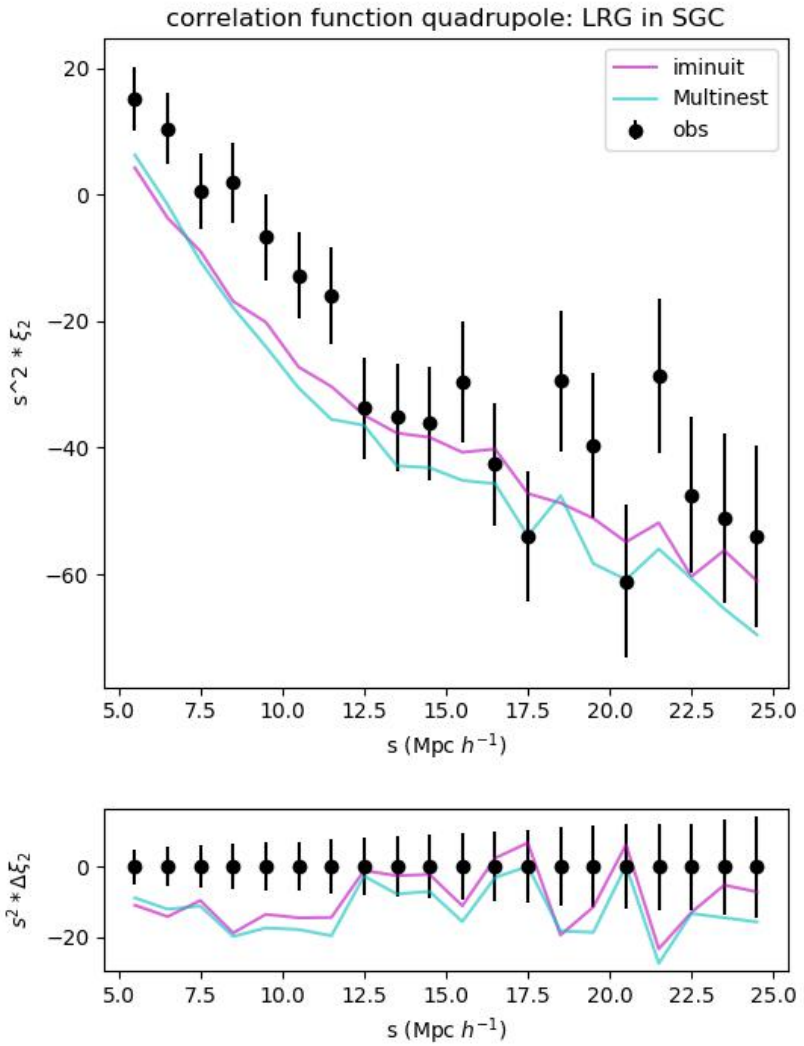
$sigma = 0.877$

$Vcut = 998 km/s$

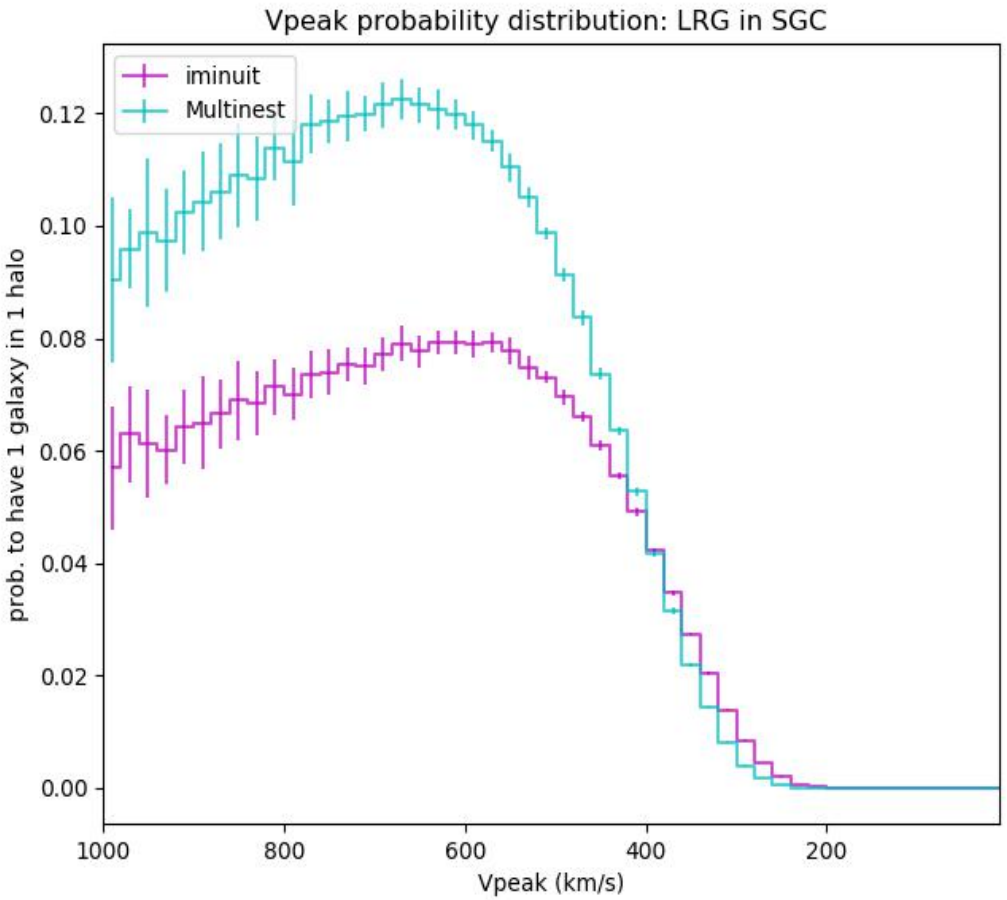
(near the prior boundary)

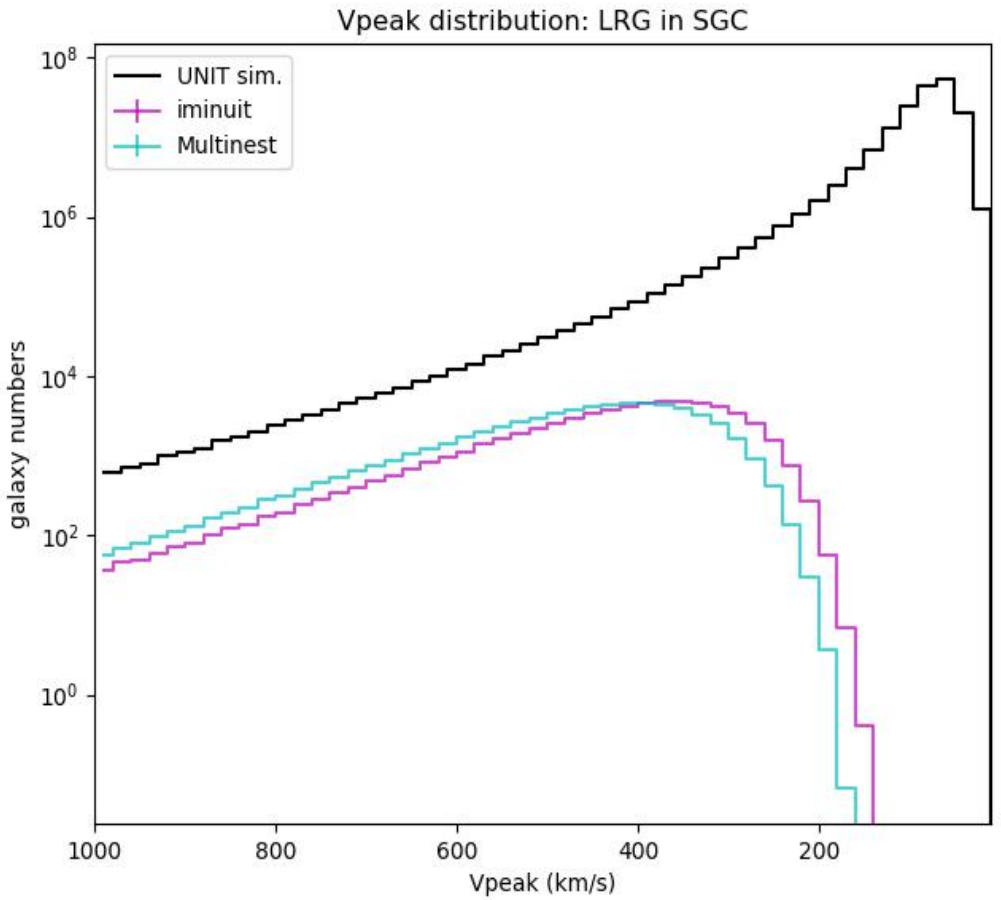
LRG SGC: correlation function





LRG SGC: Vpeak distribution





Conclusions：

- Monopoles are sensitive to parameters while quadrupoles are not
- Multinest & iminuit results are not consistent except the ELG NGC result.
- iminuit LRG SGC results seems unrealiable because it hits the boundary
- Due to the non-Guassian shape posterior, may be it is not appropriate to determine results as parameter.mean, errors as parameter.err