

# HAM iminuit & Multinest Results

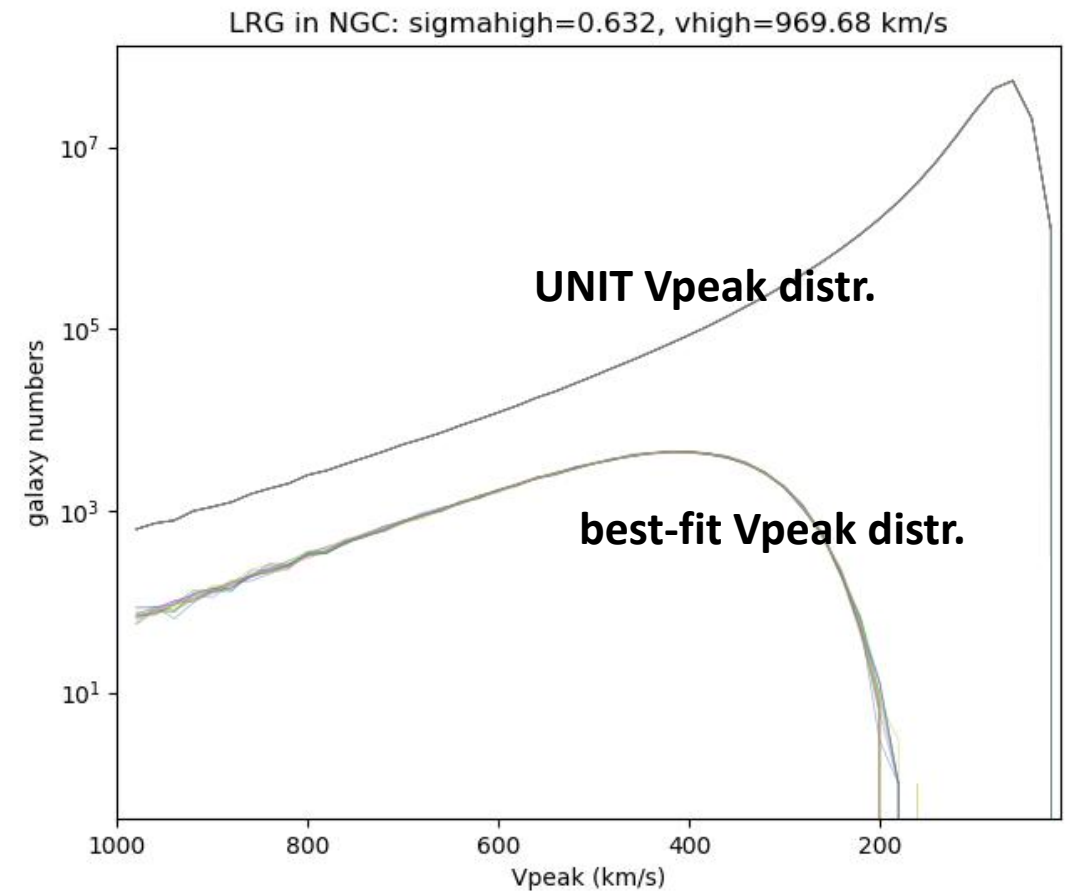
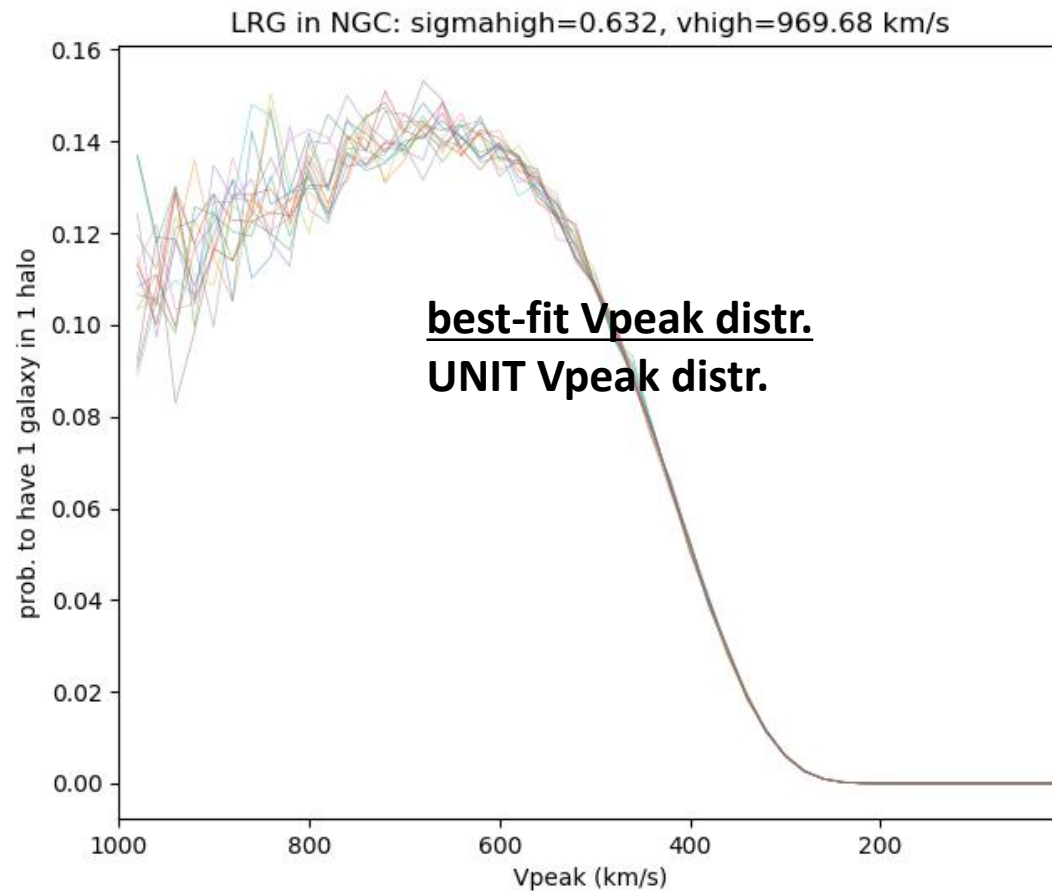
Jiaxi

25 May

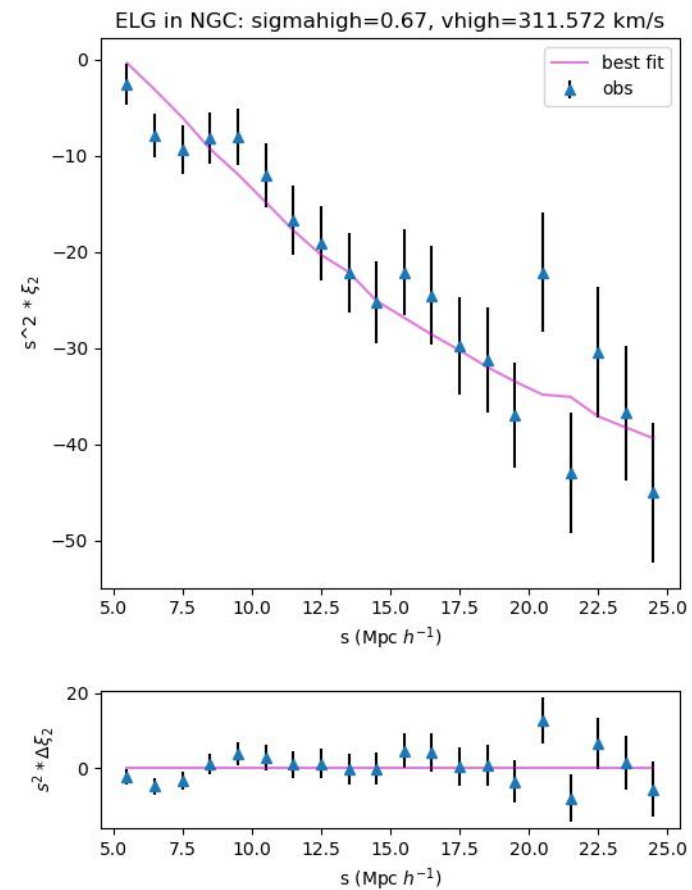
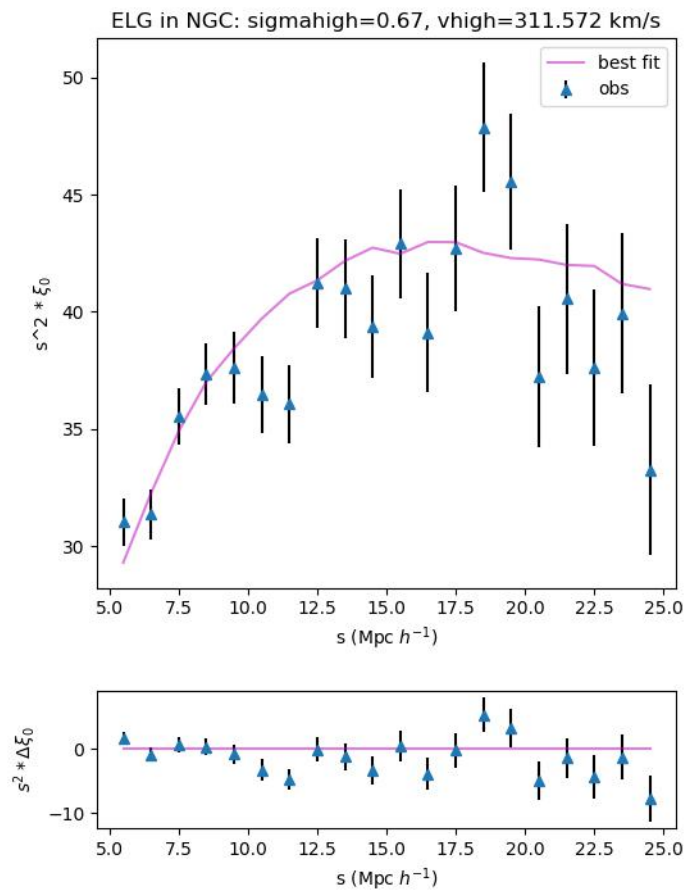
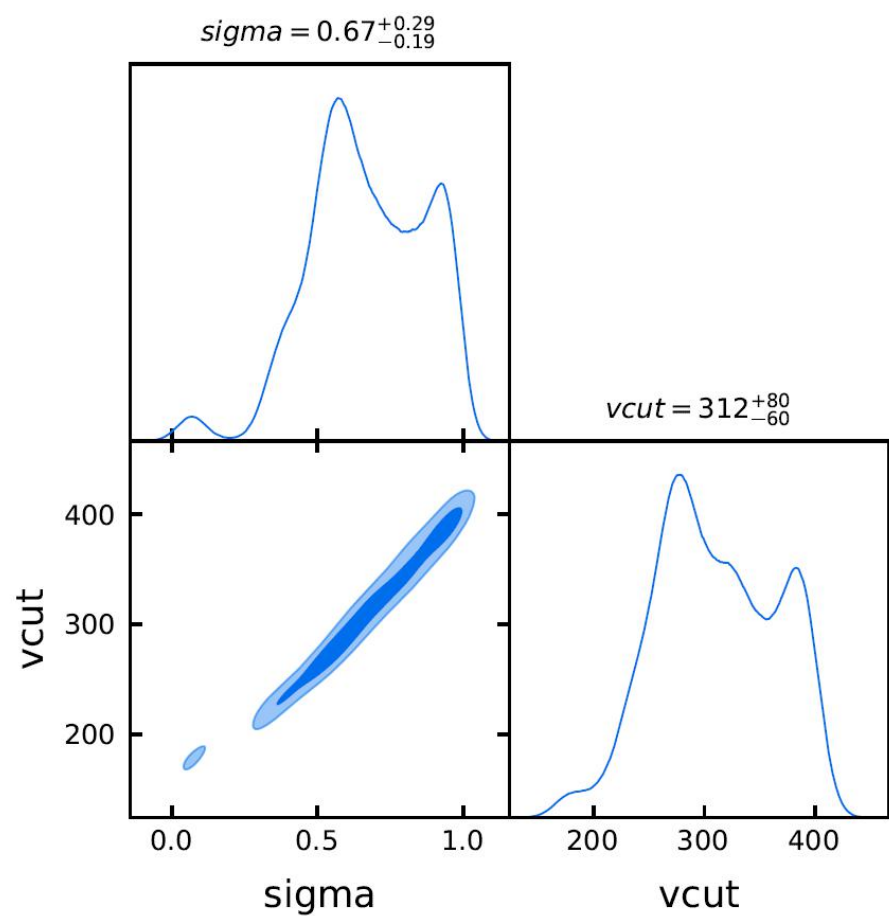
# NOTE:

- The parameters are **sigma** for scattering Vpeak; **vcut** for cutting large scattering Vpeak end
- Multinest results are **parameter.mean**, errors are **parameter.err**
- Multinest errors are considered instead of iminuit (a minimiser) because all iminuit results are not converged (Hesse error meaningless)
- **Vpeak distribution functions** present 10 realisations with the best fitting results

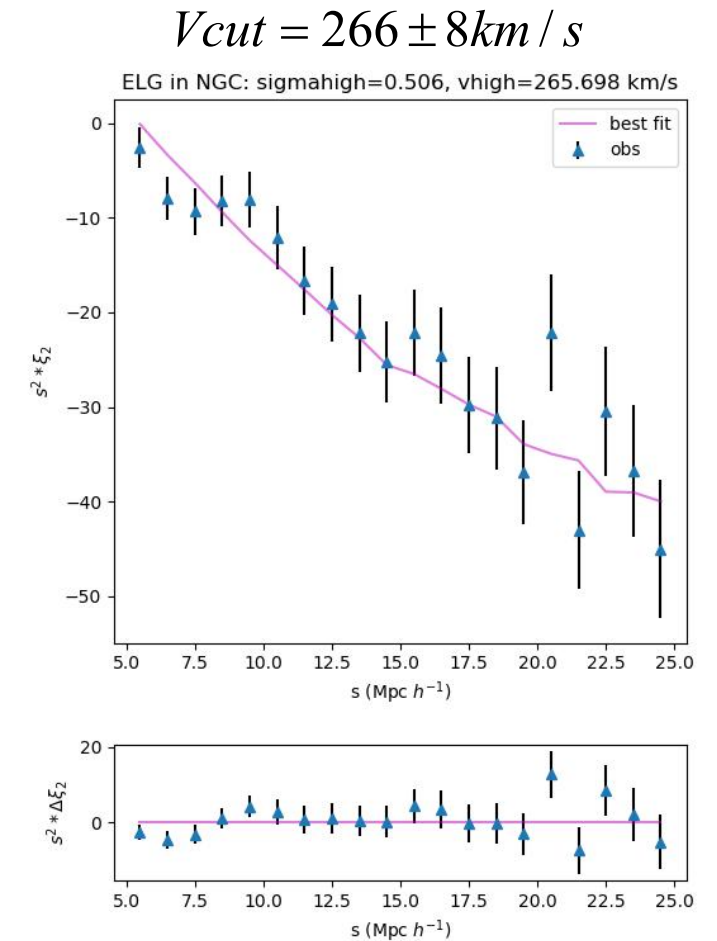
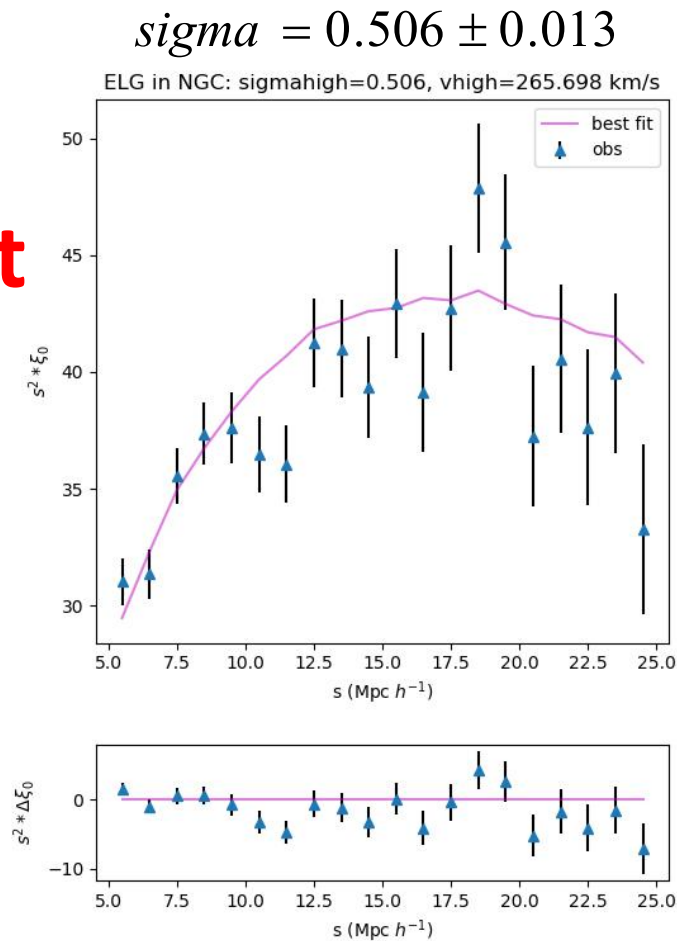
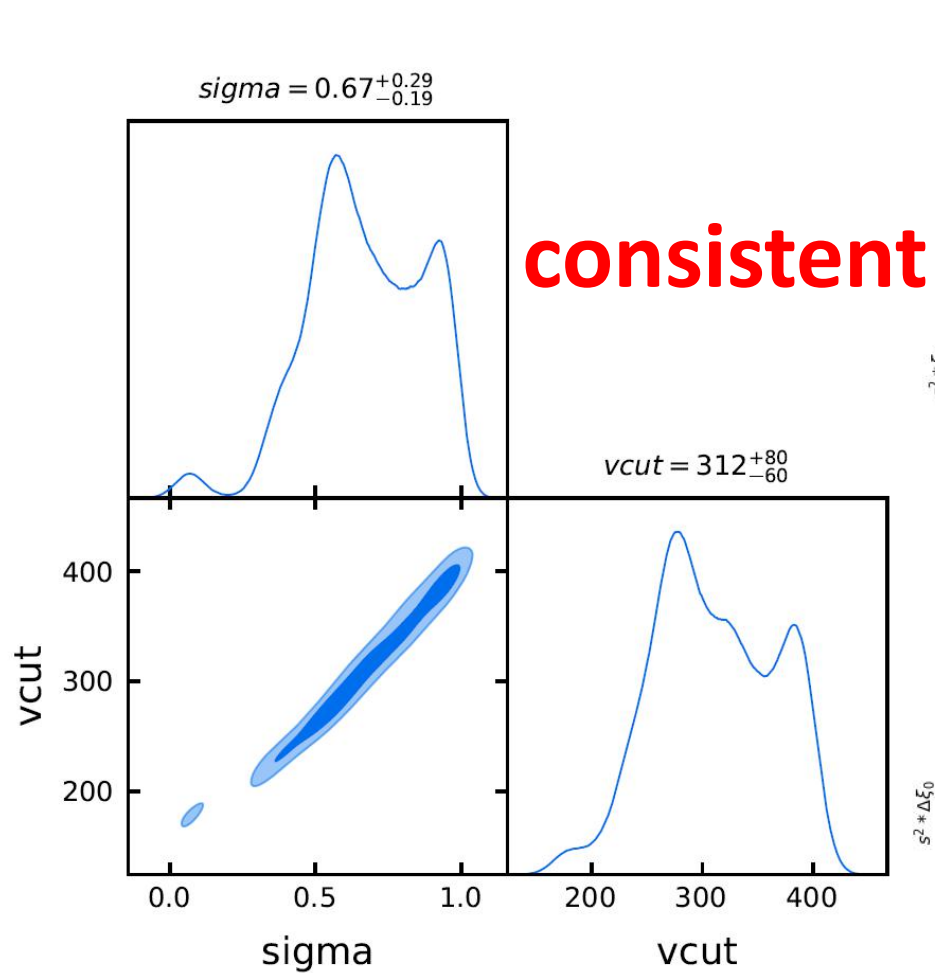
# NOTE:



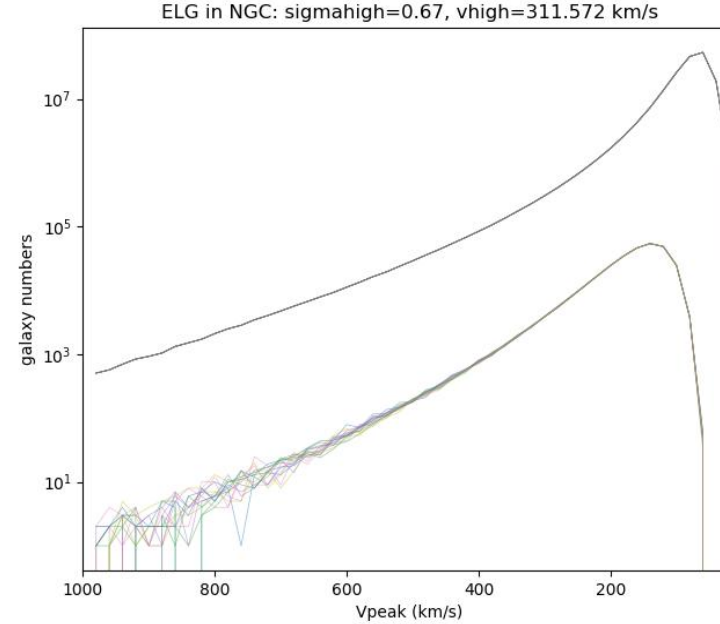
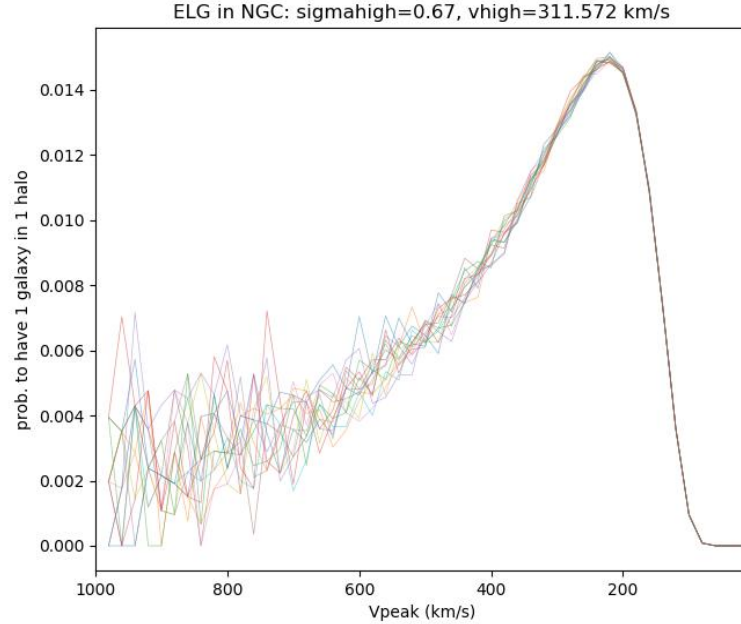
# ELG NGC: multinest



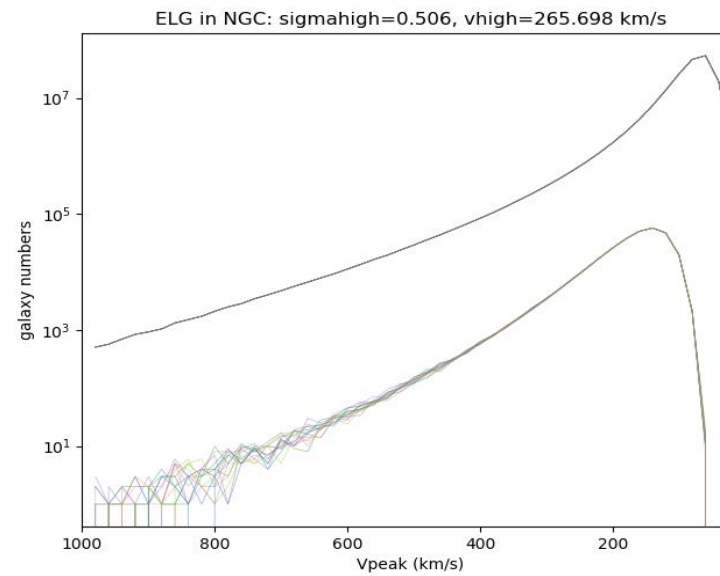
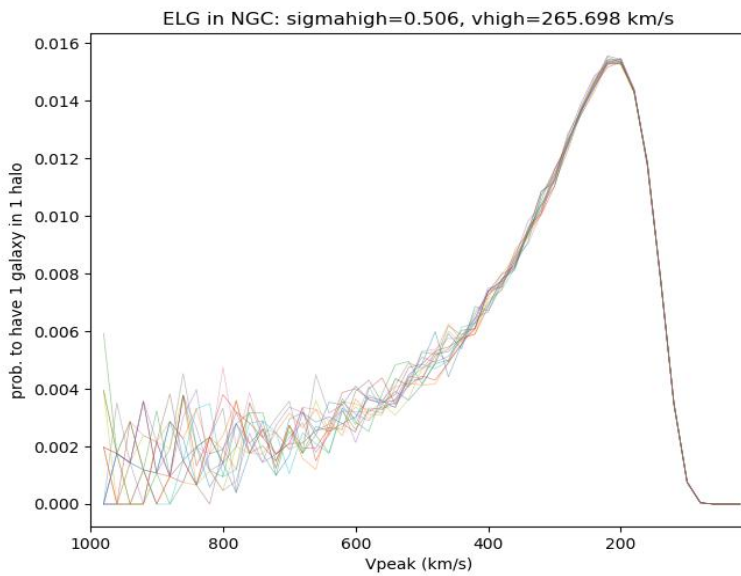
# ELG NGC: iminuit(error meaningless)



# ELG NGC:

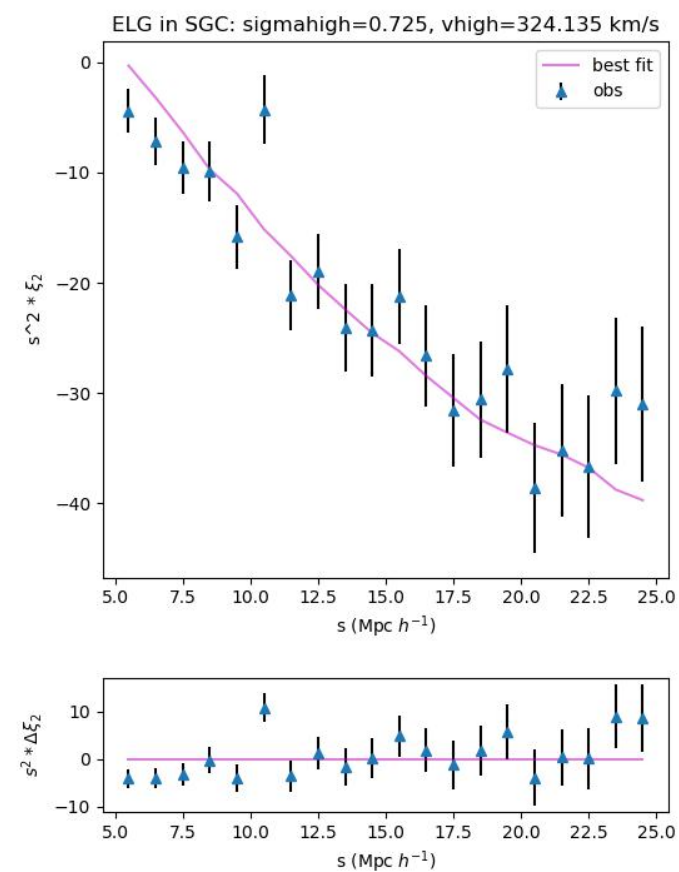
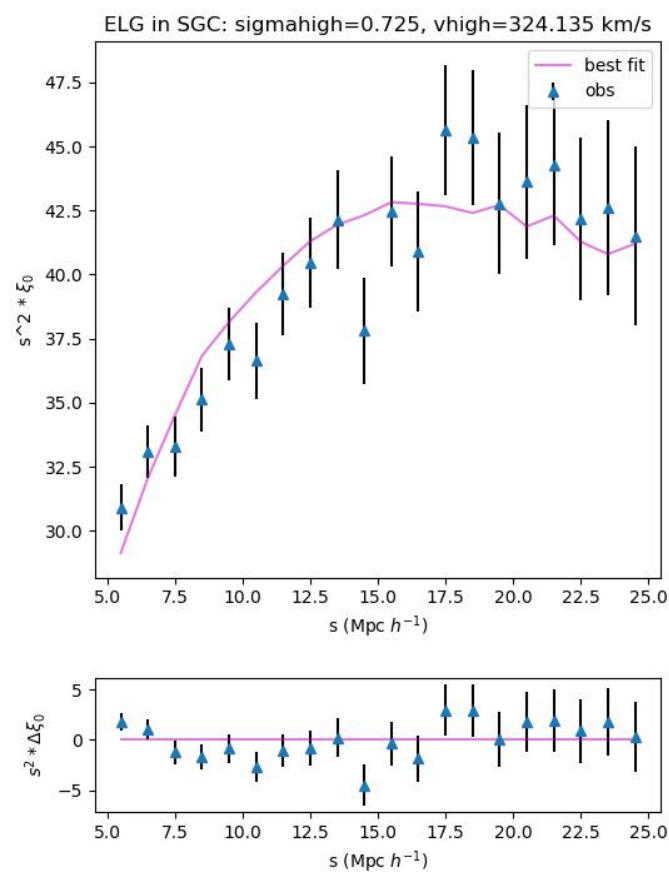
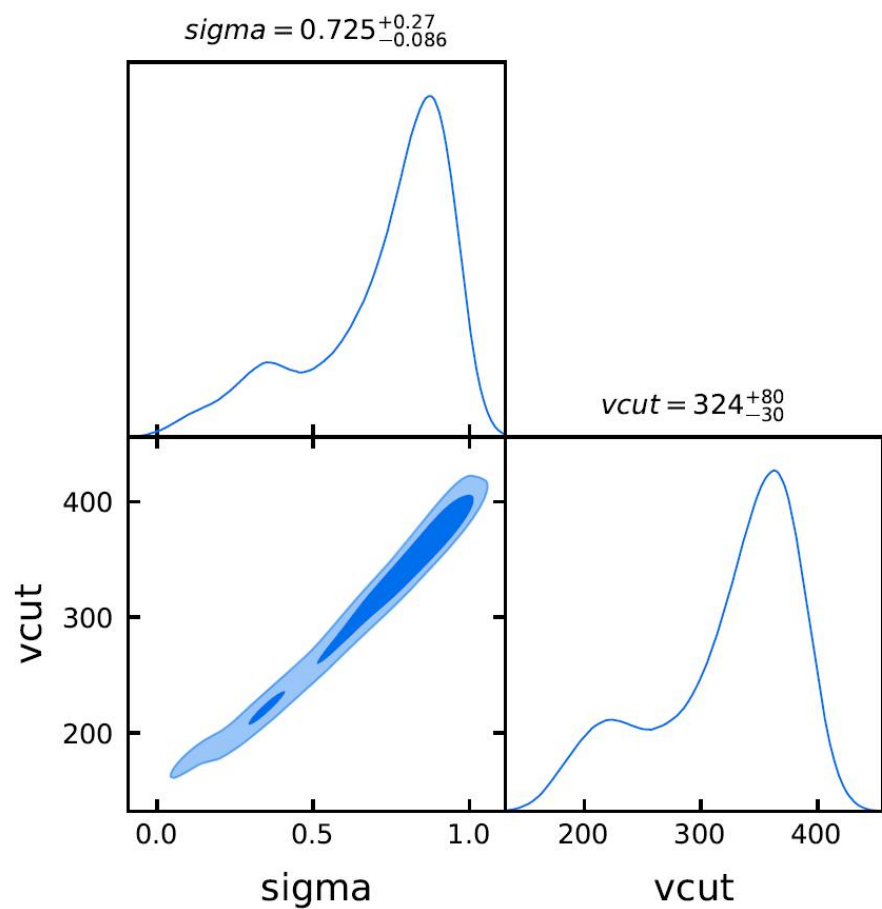


Multinest

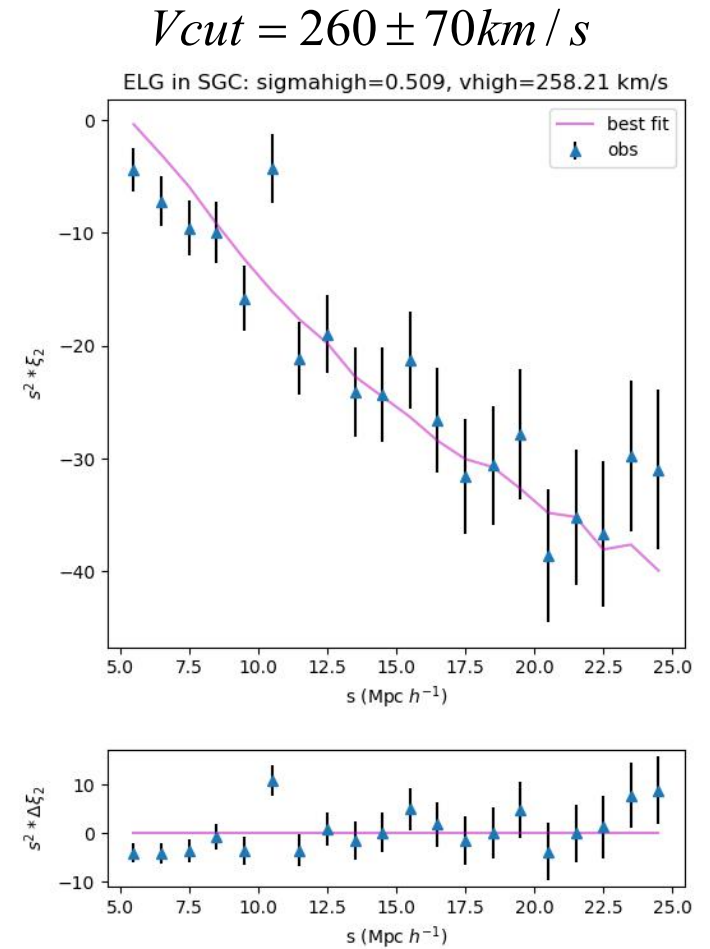
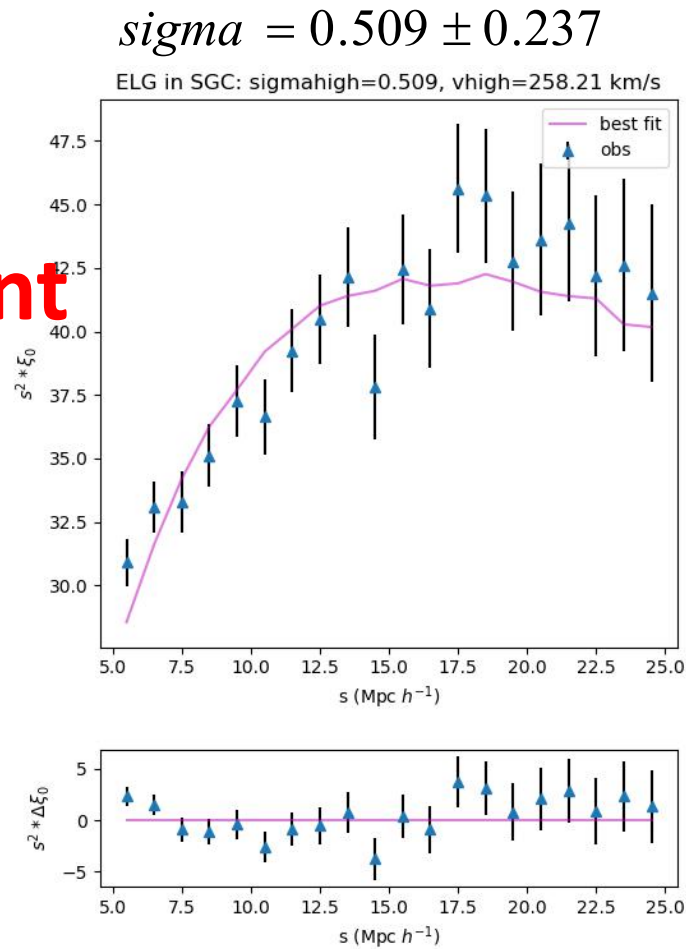
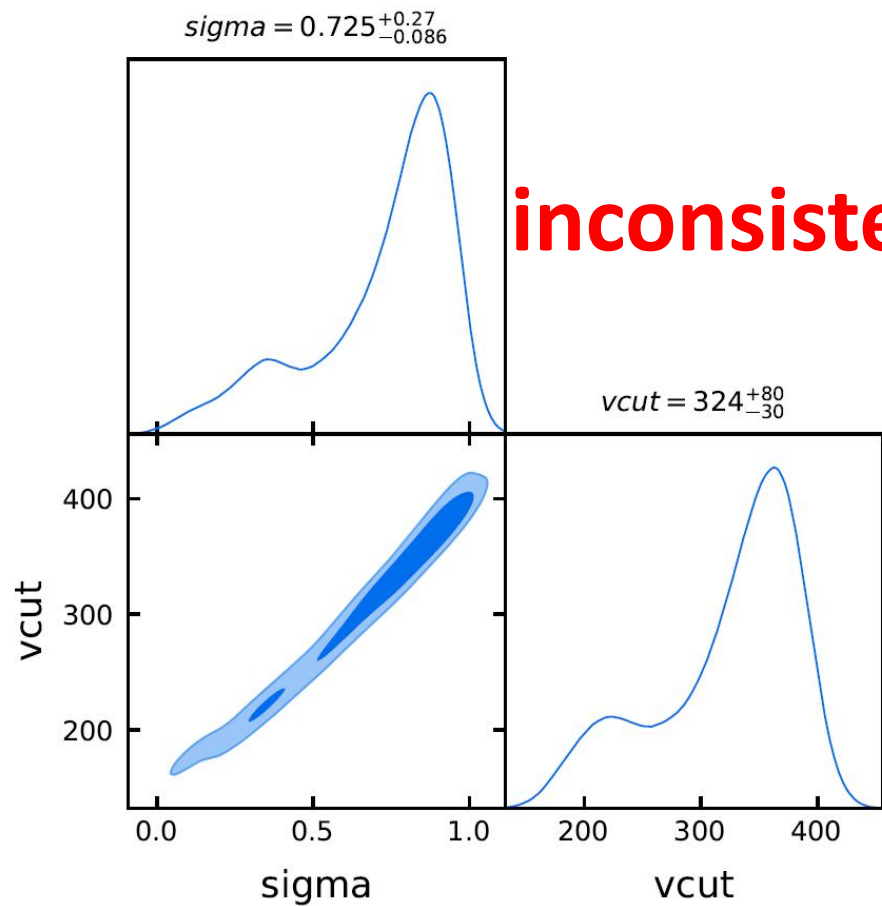


iminuit

# ELG SGC: multinest

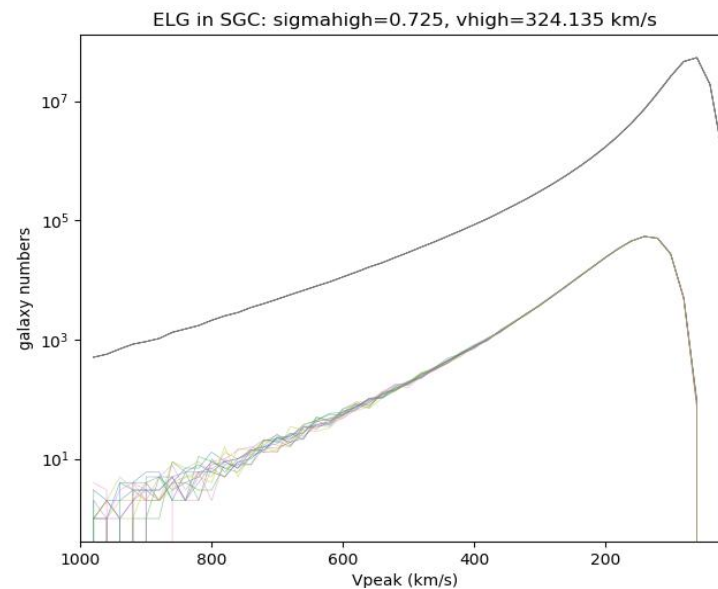
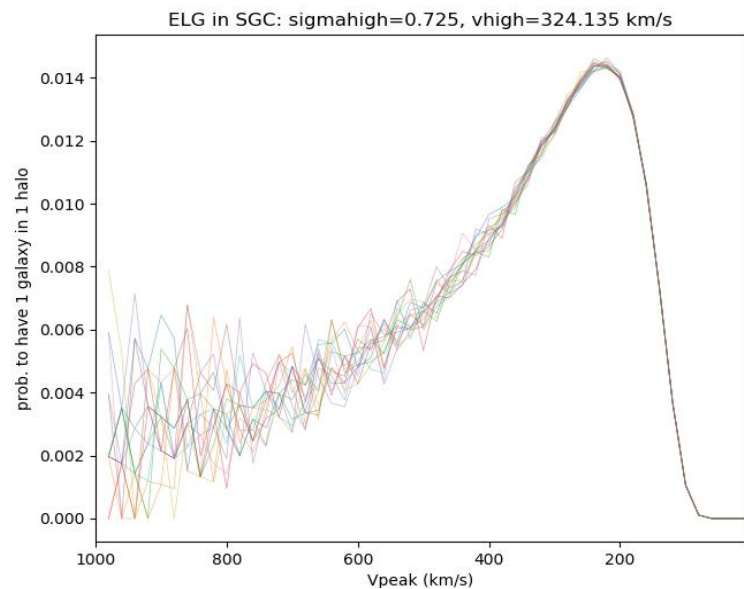


# ELG SGC: iminuit(error meaningless)

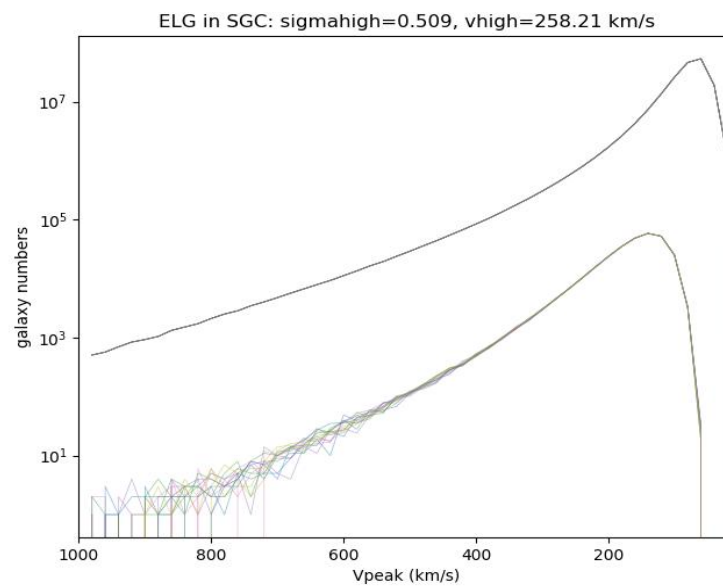
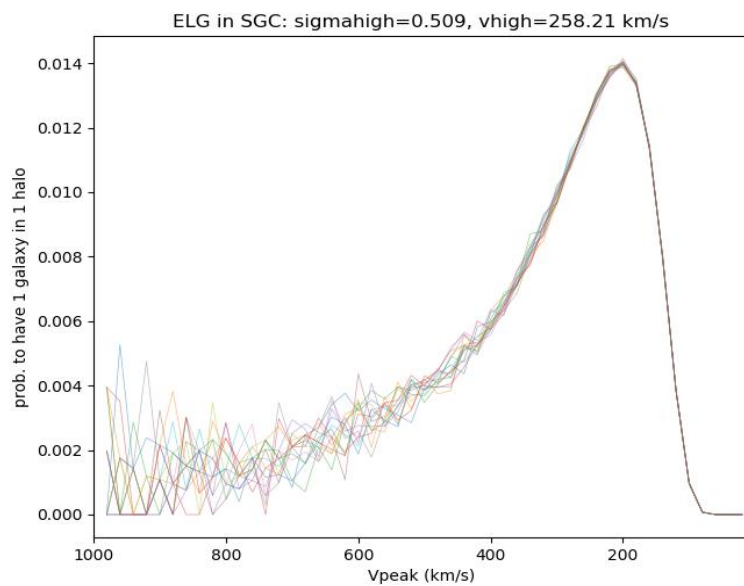




# ELG SGC:

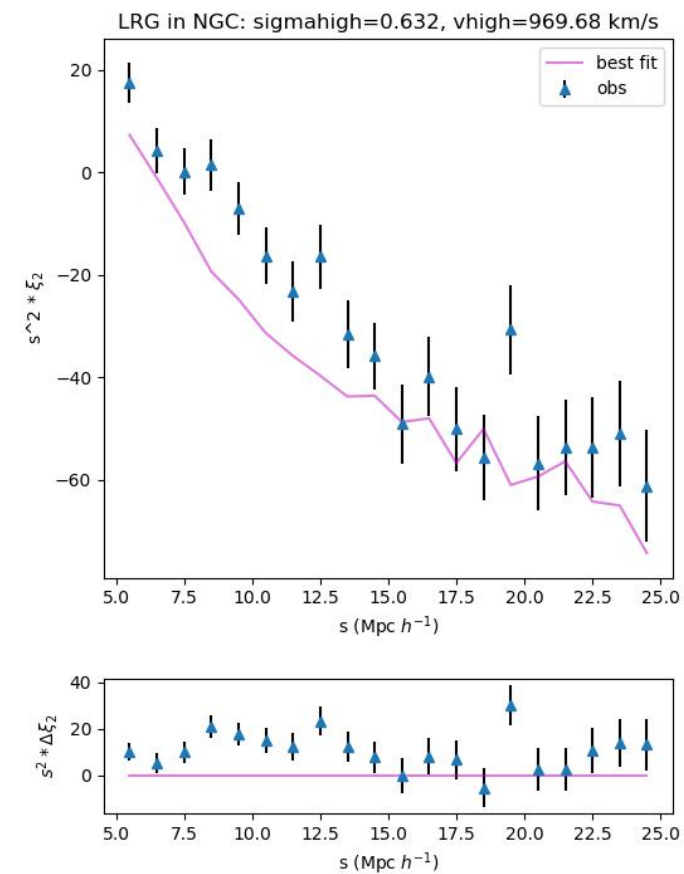
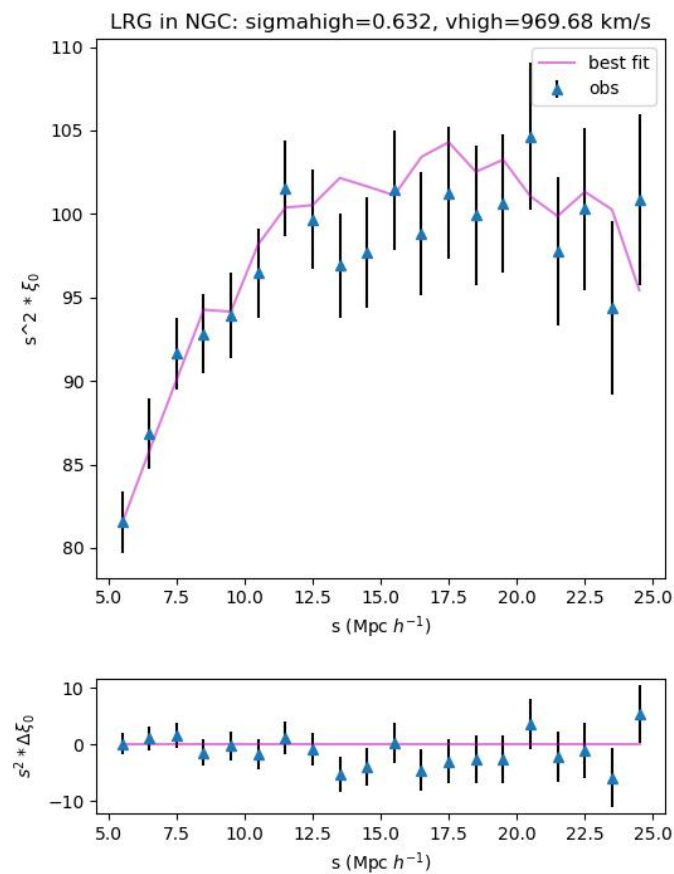
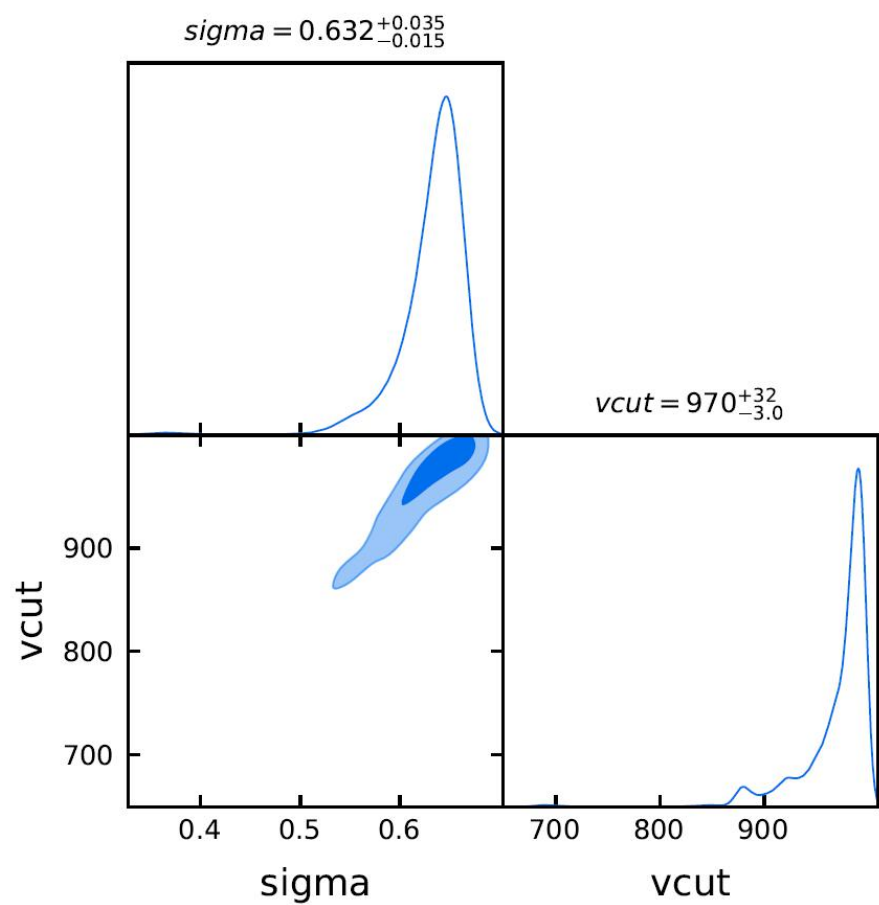


Multinest



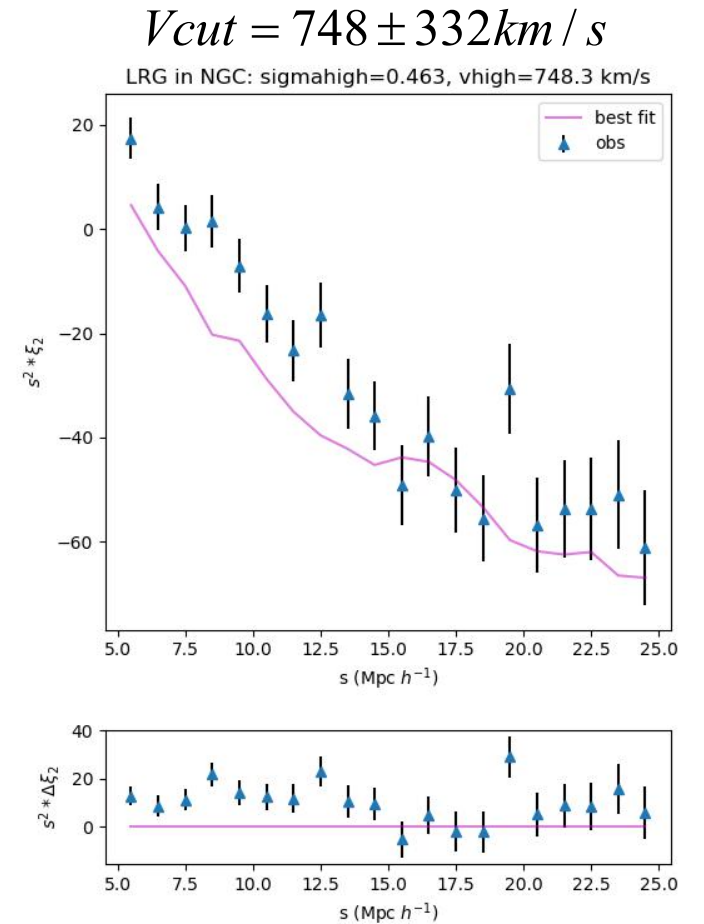
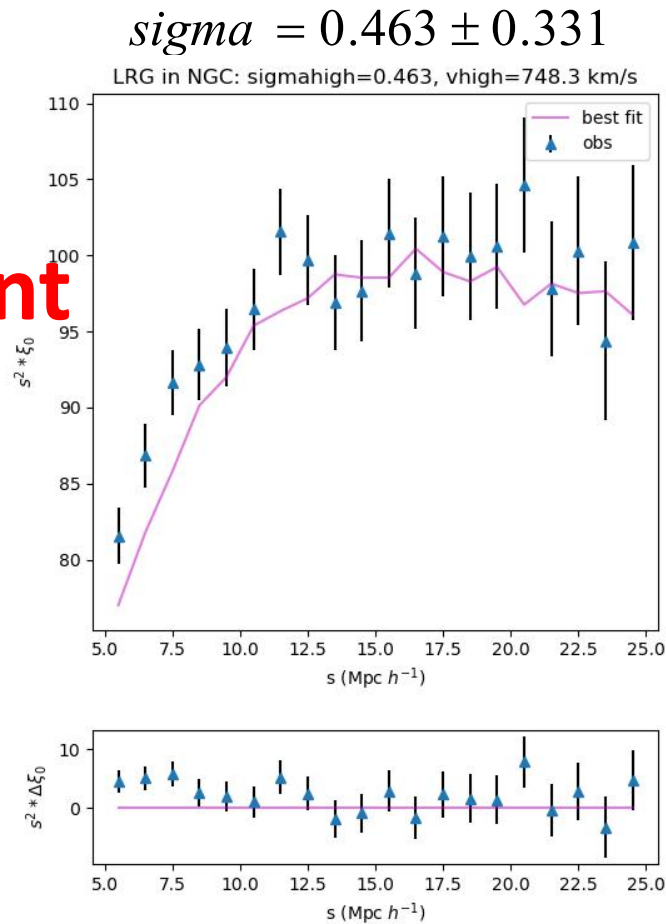
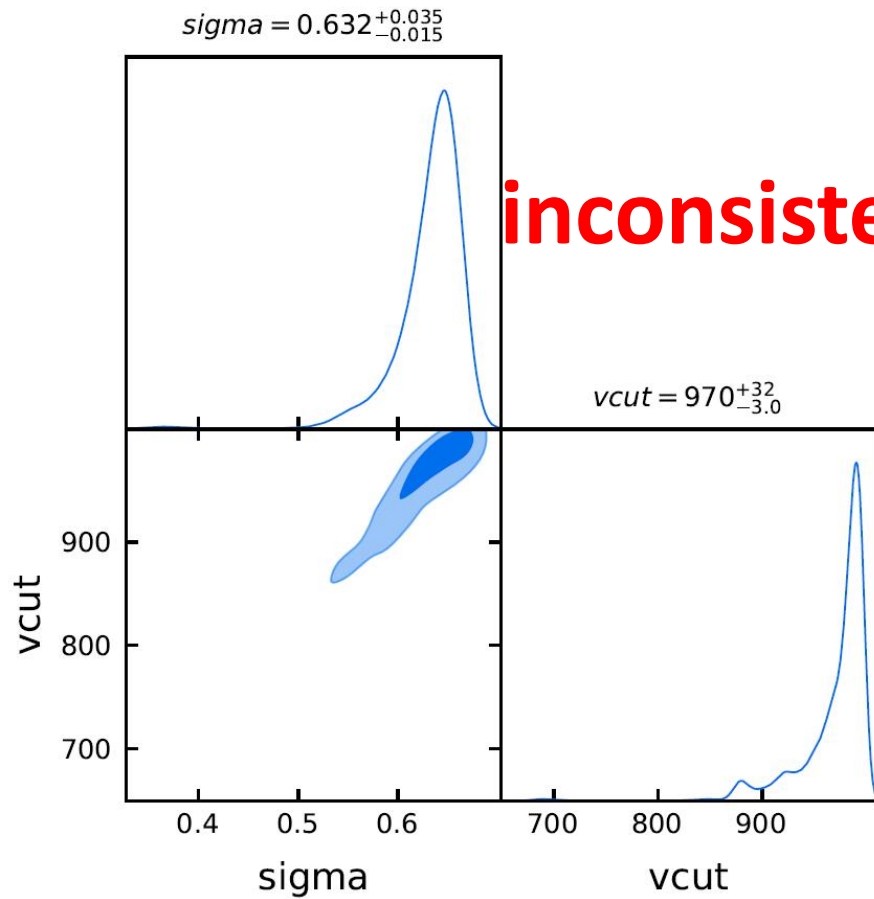
iminuit

# LRG NGC: multinest

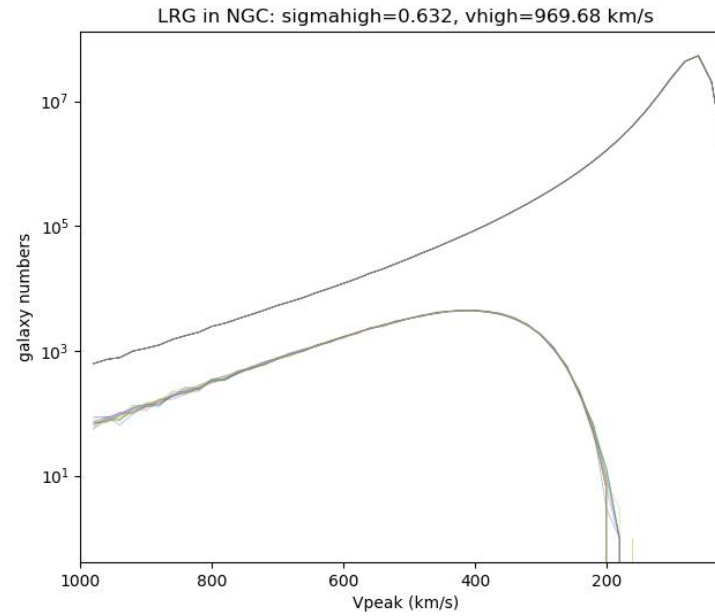
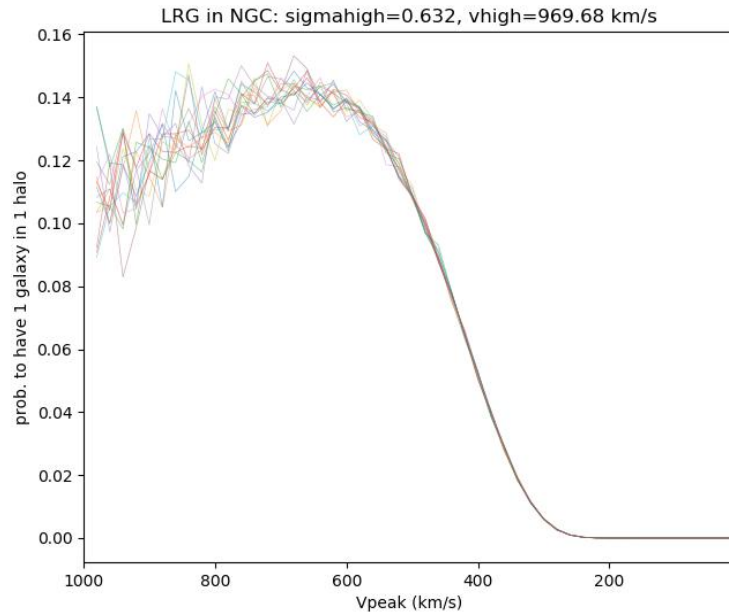


# LRG NGC: iminuit(error meaningless)

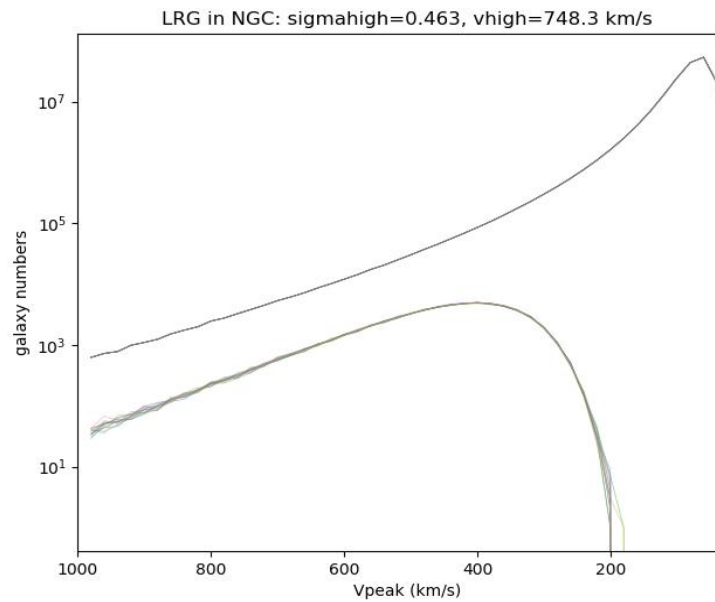
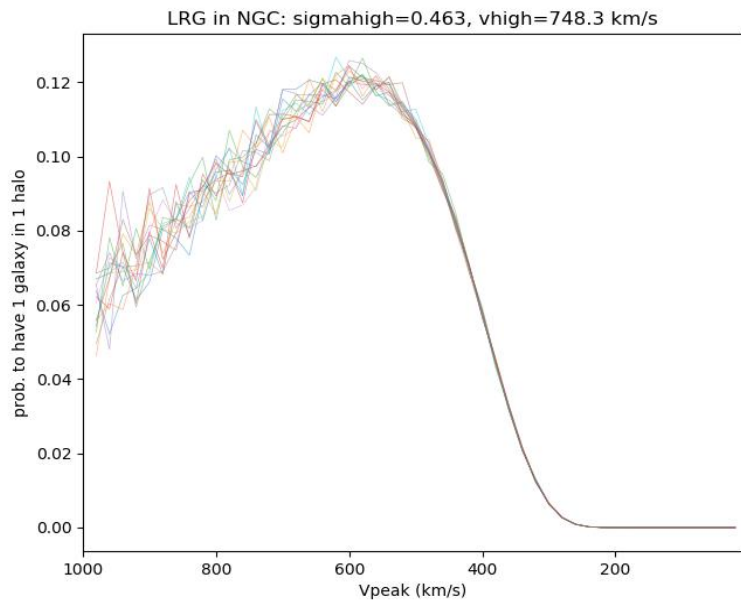
inconsistent



# LRG NGC:

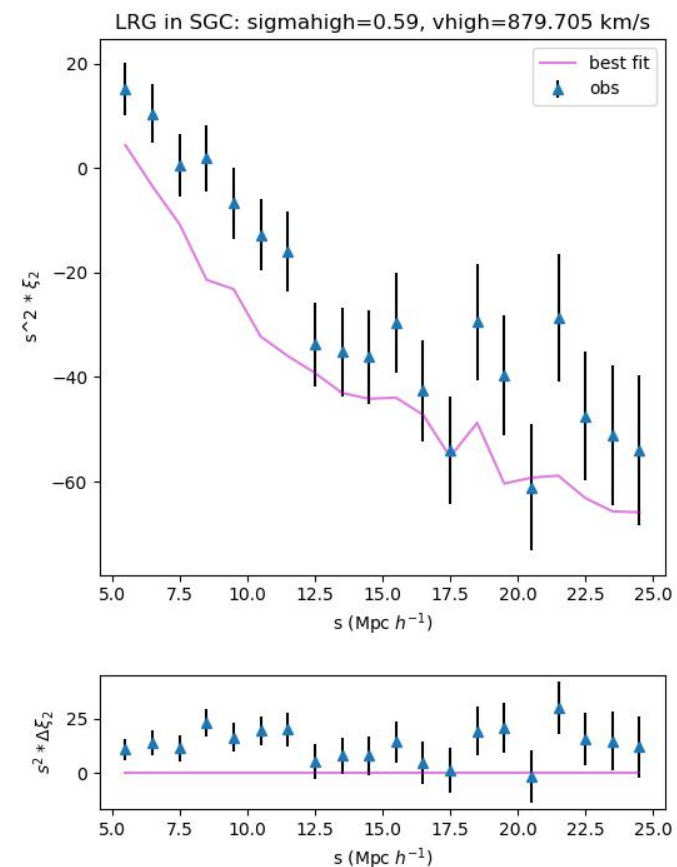
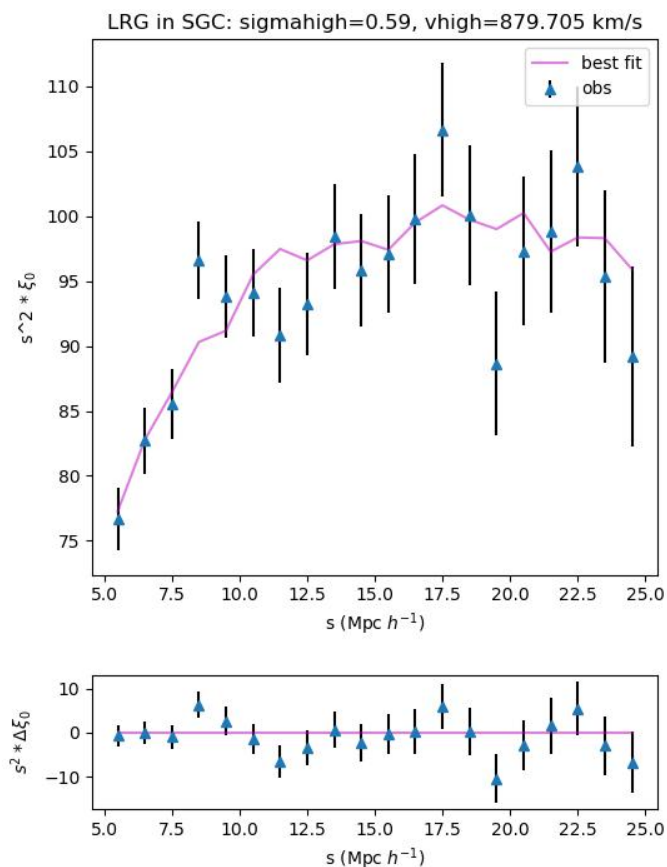
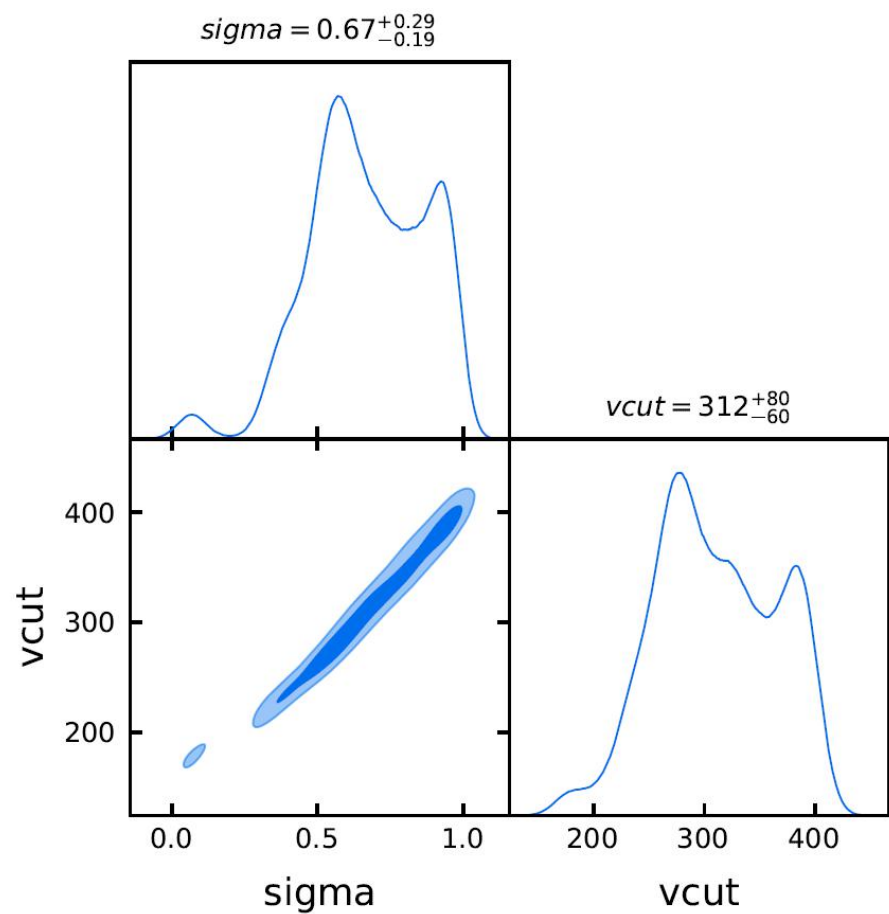


Multinest



iminuit

# LRG SGC: multinest



# LRG SGC: iminuit(error meaningless)

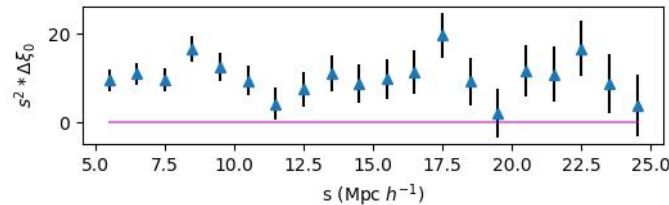
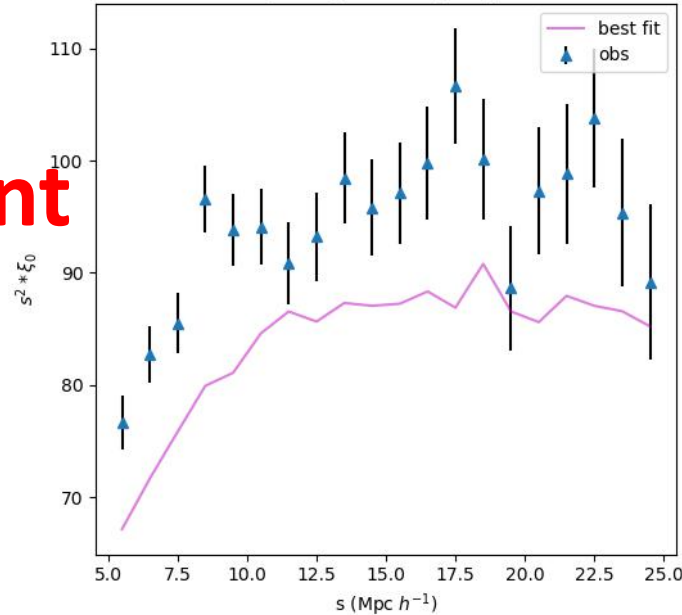
$$\sigma = 0.590^{+0.13}_{-0.031}$$

inconsistent

$$v_{\text{cut}} = 880 \pm 96$$

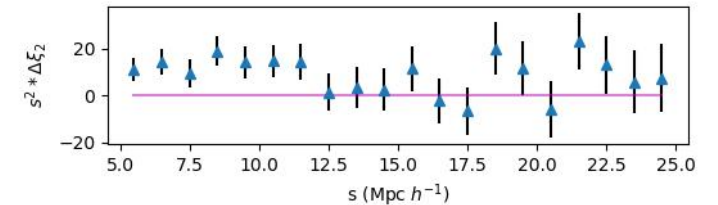
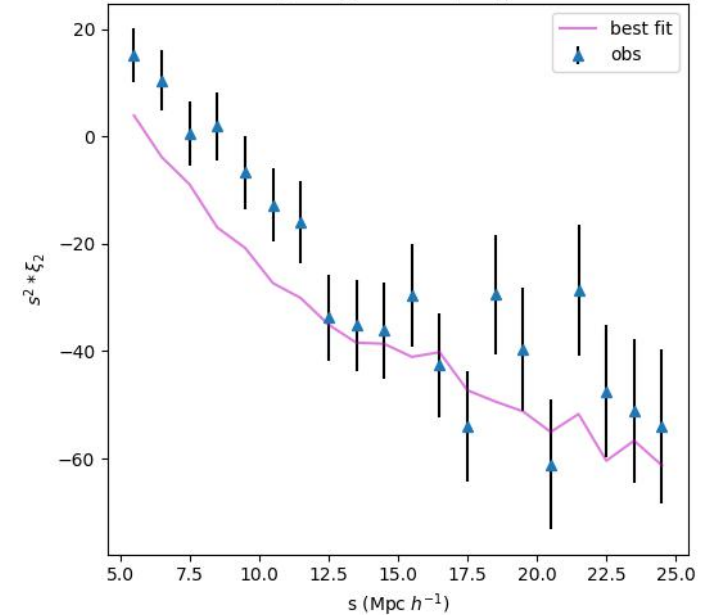
$$\sigma = 0.877 \pm 0.015$$

LRG in SGC: sigmahigh=0.877, vhigh=1000.0 km/s

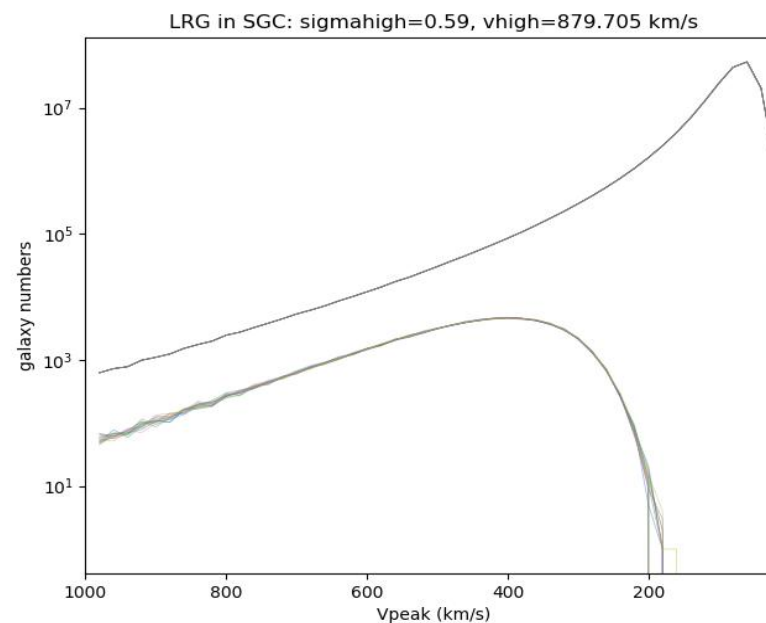
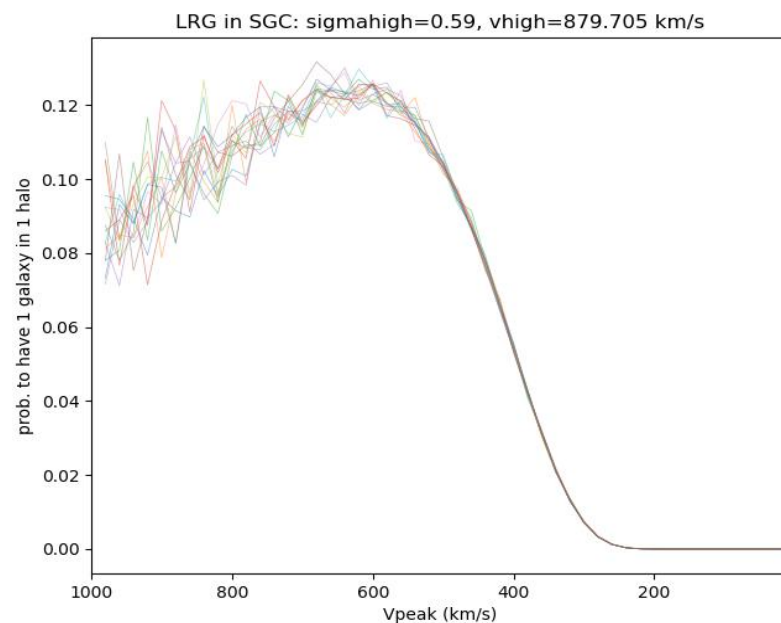


$$V_{\text{cut}} = 1000 \pm 54 \text{ km/s}$$

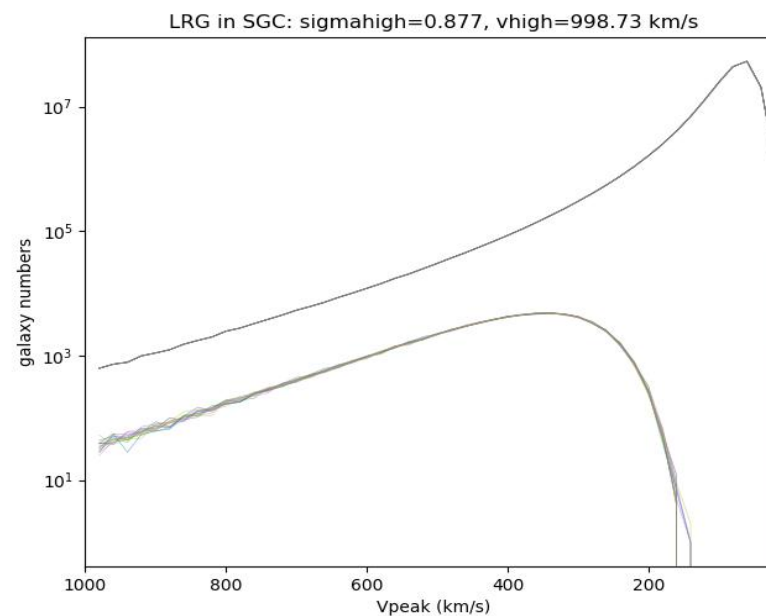
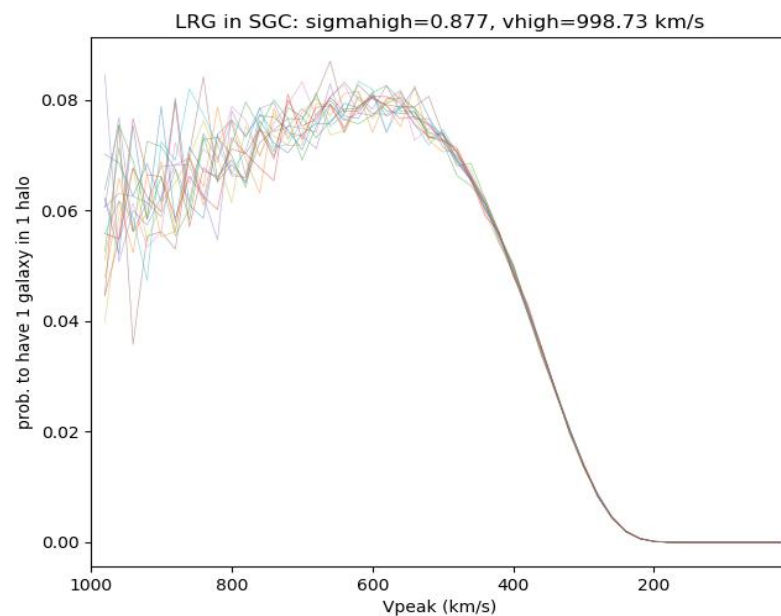
LRG in SGC: sigmahigh=0.877, vhigh=1000.0 km/s



# LRG SGC:



Multinest



iminuit



# 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 unreliable because it hits the boundary
- Due to the non-Gaussian shape posterior, may be it is not appropriate to determine results as **parameter.mean**, errors as **parameter.err**