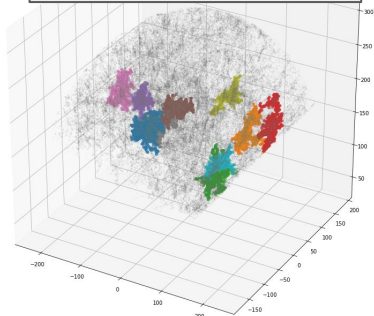


# MGS of MGS with other algorithms

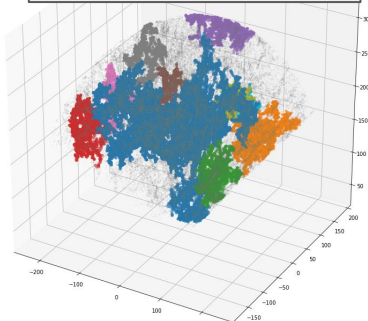
- comparing ***MGS of MGS*** with other clustering algorithms
- free-parameters = 4.0
  - **MGS** : Resolution = 4.0
  - **MGS of MGS** : MergingDistance = 4.0
  - **MST** : cut-length = 4.0
  - **DBSCAN** : eps = 4.0, min\_sample=10
  - **Hierarchical** : distance\_threshold = 4.0
- Number of galaxies  $\geq 3$

# MGS of MGS with other algorithms : Largest 10 clusters

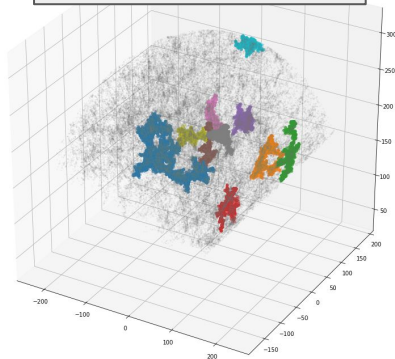
MGS of MGS



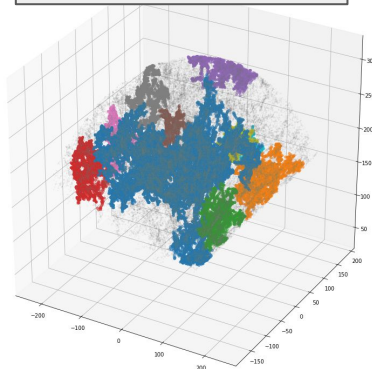
MST



DBSCAN



Hierarchical



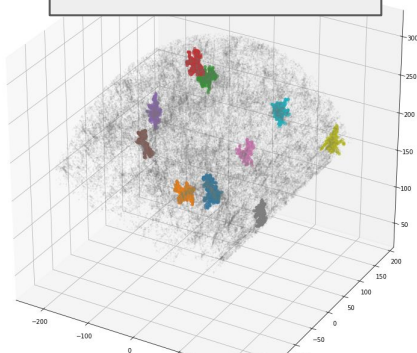
	Number of recovered clusters
MGS of MGS	4850 (8191)
MST	4185
DBSCAN	1479
Hierarchical	4185

# Comparing with simulation

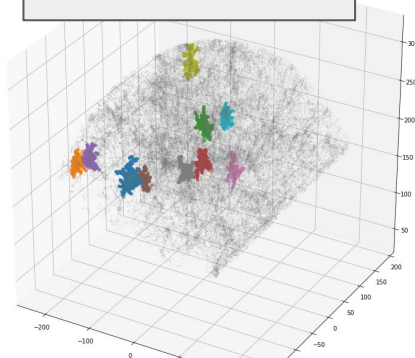
- Now, I'm comparing real data with 4 simulation data  
-> Simulations are came from *Horizon Run 4*
- I used the same free-parameters

# Comparing with simulation

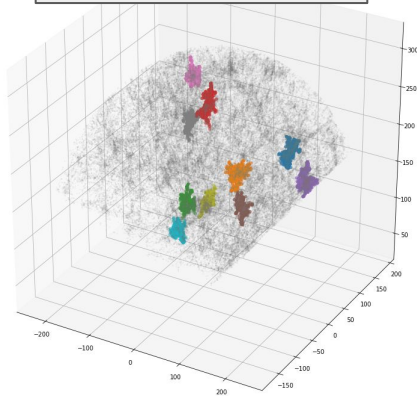
Simulation 1



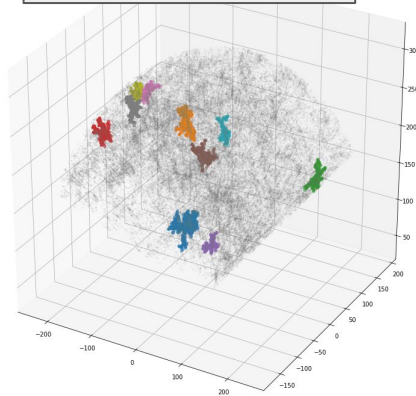
Simulation 2



Simulation 3



Simulation 4

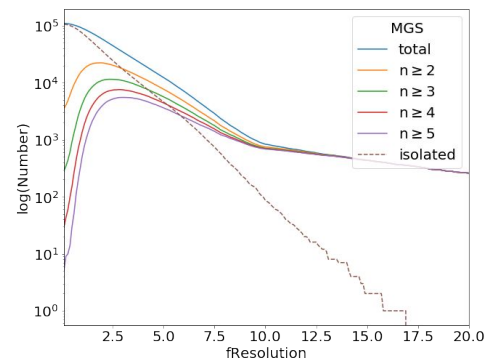
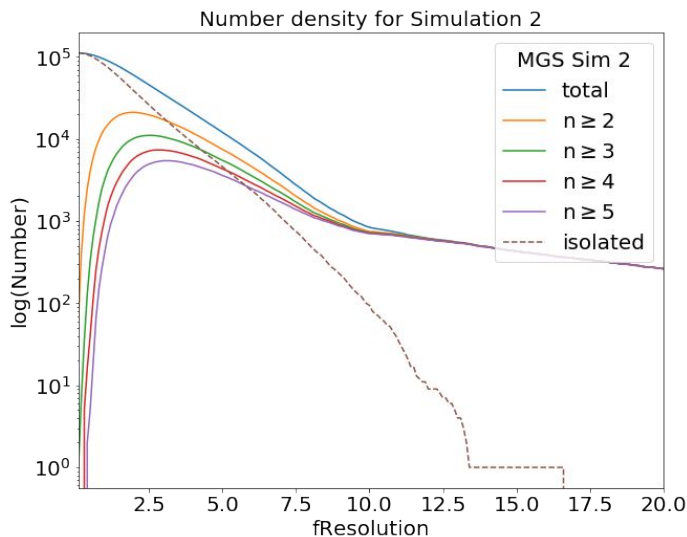
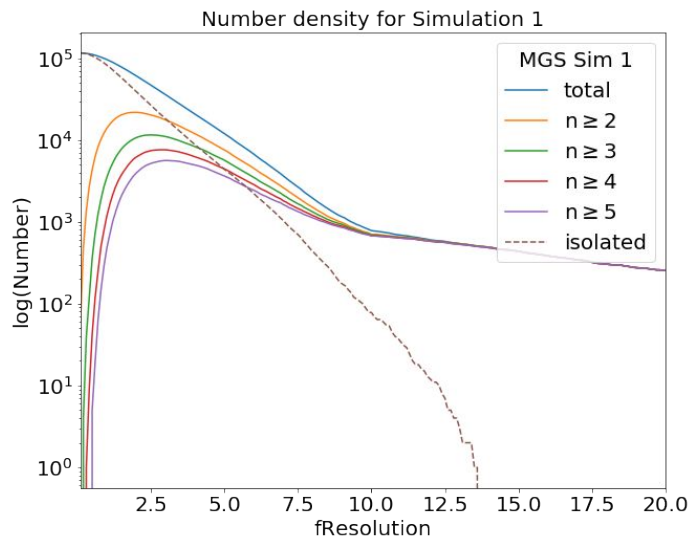


- The number of recovered clusters

Real	8191
Sim 1	8297
Sim 2	8128
Sim 3	8319
Sim 4	8295

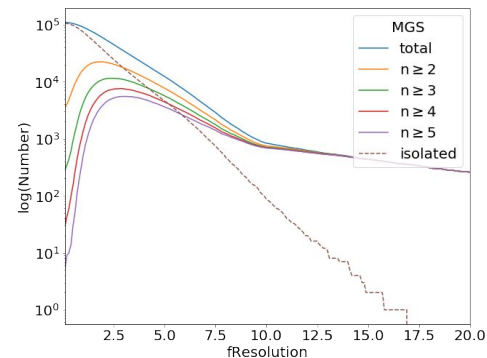
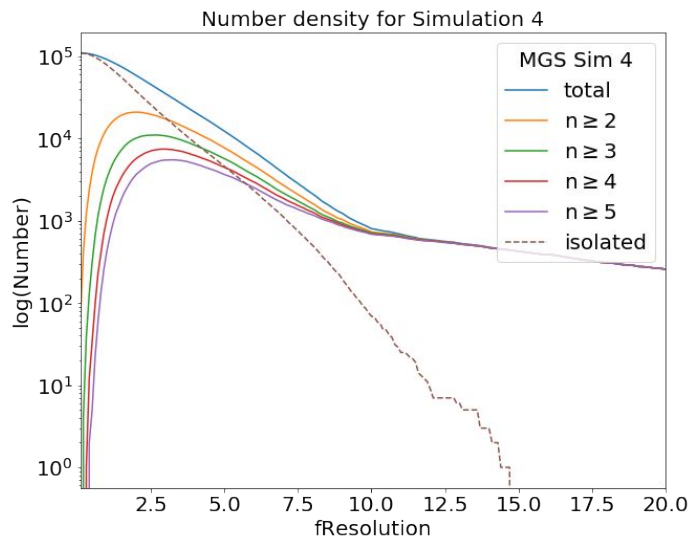
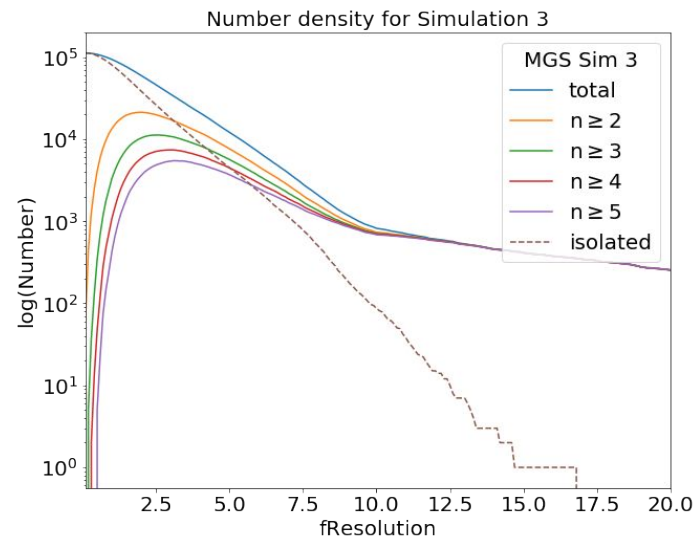
# Comparing with simulation

- Check the number of cluster that number of member is larger than 2,3,4,5



# Comparing with simulation

- Check the number of cluster that number of member is larger than 2,3,4,5



# Comparing with simulation

- I calculated number of galaxies in 1st and 2nd largest clusters

