

Test Algorithms with Random data set

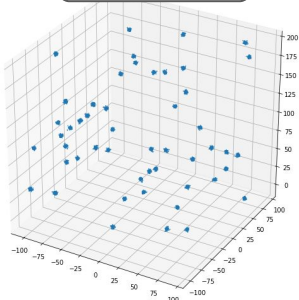
Number of clusters : **50**

Number of galaxies in each clusters : **100**

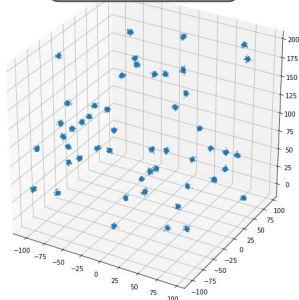
The galaxies are distributed in each clusters by Gaussian distribution

When I use the gaussian distribution, I **change std** such as 1, 2, 4, 6, 8, 10

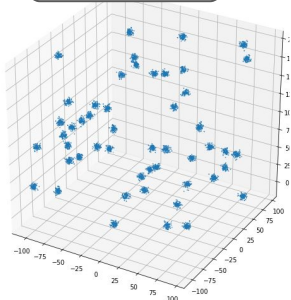
std = 1



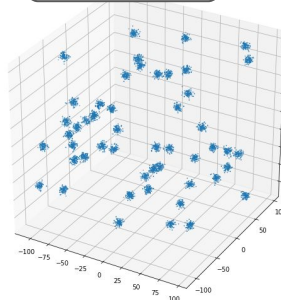
std = 2



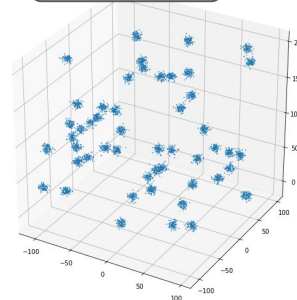
std = 4



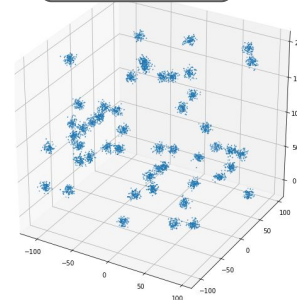
std = 6



std = 8



std = 10



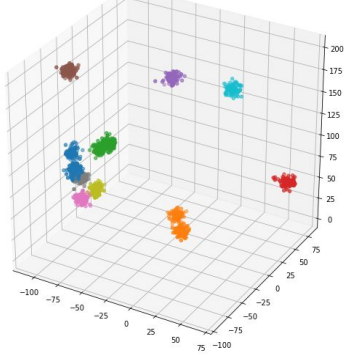
Test Algorithms with Random data set

- This is results for several data set
- Cut-length (or fResolution) of all algorithms = 10.0
- Given number of clusters = **50**

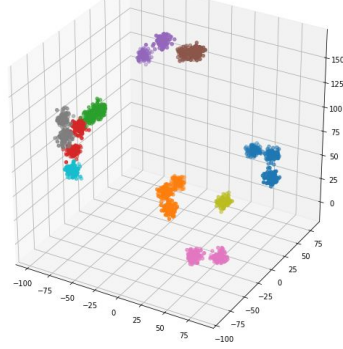
Sigma	1	2	4	6	8	10
MGS	49	49	47	47	48	47
MoM (MGS of MGS)	49	49	46	43	42	40
MST	50	50	50	48	48	44
DBSCAN	49	49	46	43	42	40
Hierarchical	49	49	46	43	42	40

Test Algorithms with Random data set (*only present 10 largest clusters*)

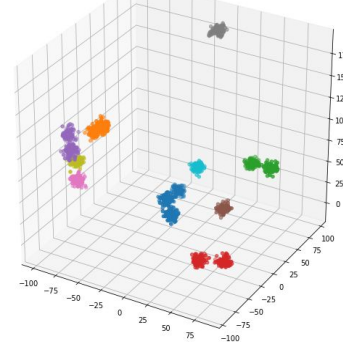
MGS (47)



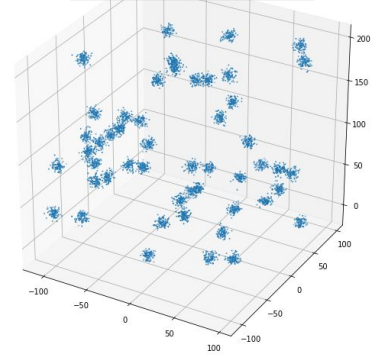
MoM (40)



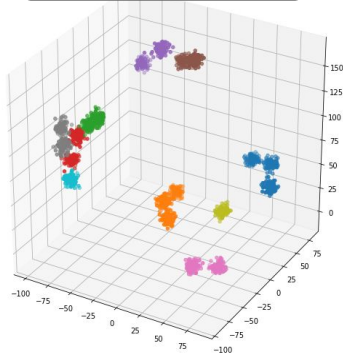
MST (44)



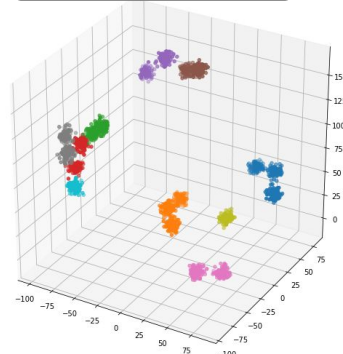
Input :
std = 10



DBSCAN (40)



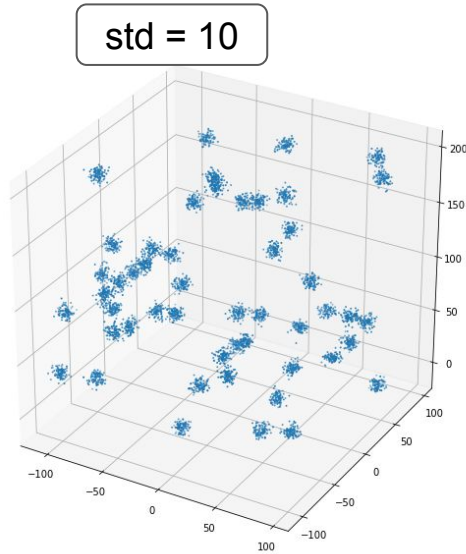
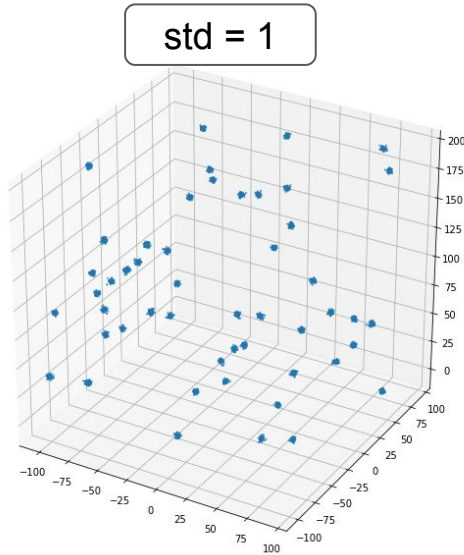
Hierarchical (40)



	Efficiency(%)
MGS	94
MoM	80
MST	88
DBSCAN	80
Hierarchical	80

Test Algorithms with Random data set

- Now, I **change cut-length** from **1** to **10** for only 2 data



Test Algorithms with Random data set

- Given number of clusters = **50**

1st data

cut-length	MGS	MoM	MST	DBSCAN	Hierarchical
1	458	70	62	51	446
2	137	50	50	50	56
3	63	50	50	50	50
4	51	50	50	50	50
5	50	50	50	50	50
6	50	50	50	50	50
7	50	50	50	50	50
8	50	50	50	50	50
9	49	49	50	49	49
10	49	49	50	49	49

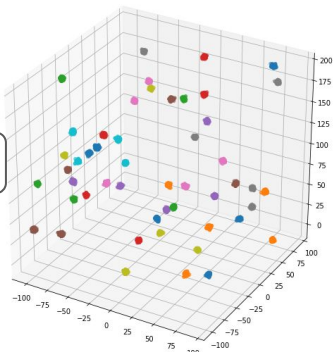
2nd data

cut-length	MGS	MoM	MST	DBSCAN	Hierarchical
1	94	112	112	None	4368
2	410	264	236	18	1756
3	133	67	66	53	559
4	60	51	50	50	195
5	51	47	47	48	84
6	49	46	45	46	53
7	49	45	45	44	48
8	48	44	44	44	46
9	47	43	44	49	44
10	47	40	44	40	40

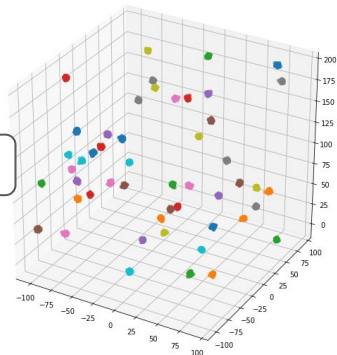
1st data

cut-length	MGS	MoM	MST	DBSCAN	Hierarchical
10	49	49	50	49	49
Efficiency(%)	98	98	100	98	98

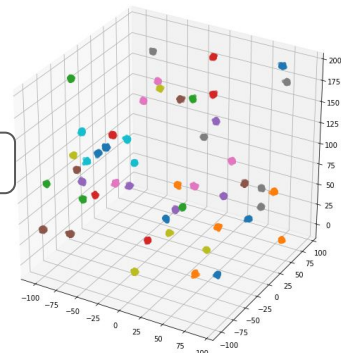
MGS



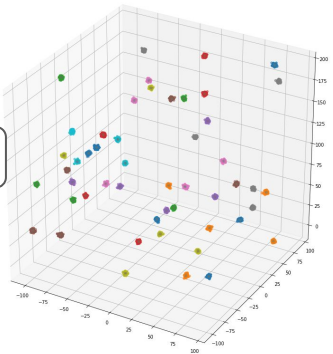
MST



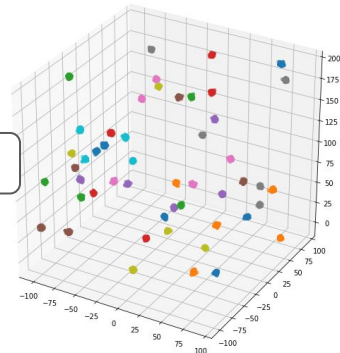
DBSCAN



MoM



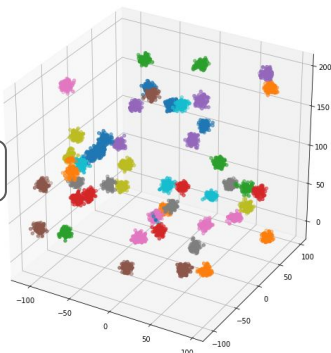
Hierarchical



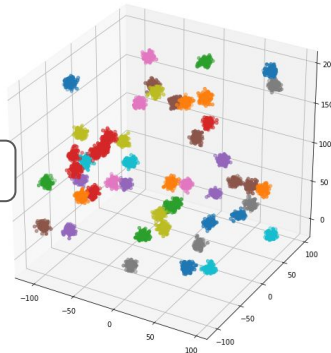
2nd data

cut-length	MGS	MoM	MST	DBSCAN	Hierarchical
5	51	47	47	48	84
Efficiency(%)	102	94	94	96	168

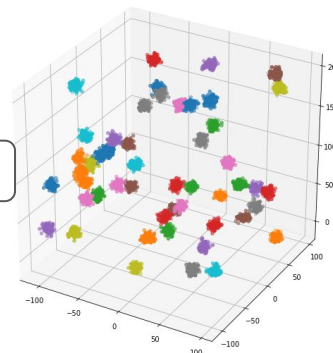
MGS



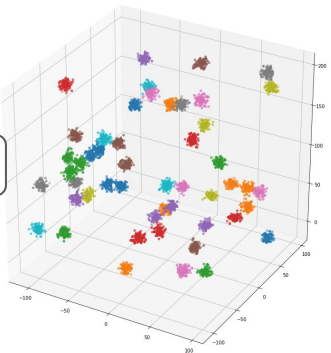
MST



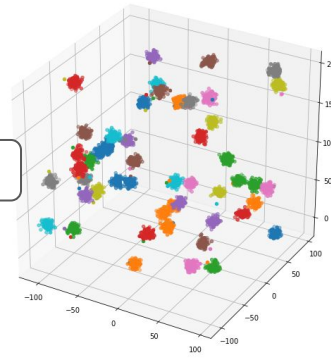
DBSCAN



MoM



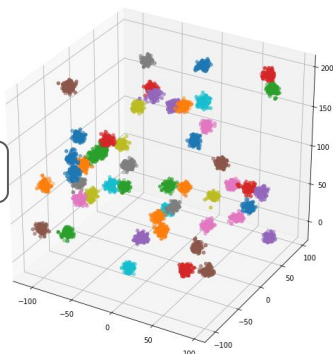
Hierarchical



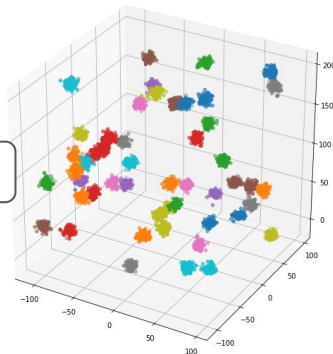
2nd data

cut-length	MGS	MoM	MST	DBSCAN	Hierarchical
10	47	40	44	40	40
Efficiency(%)	94	80	88	80	80

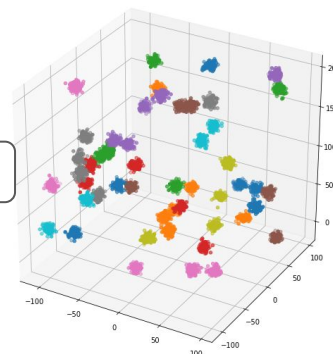
MGS



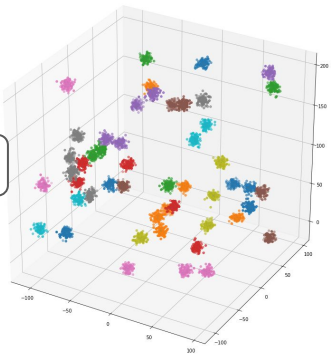
MST



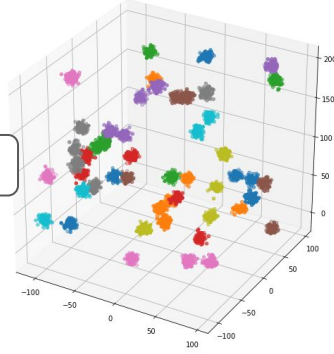
DBSCAN



MoM



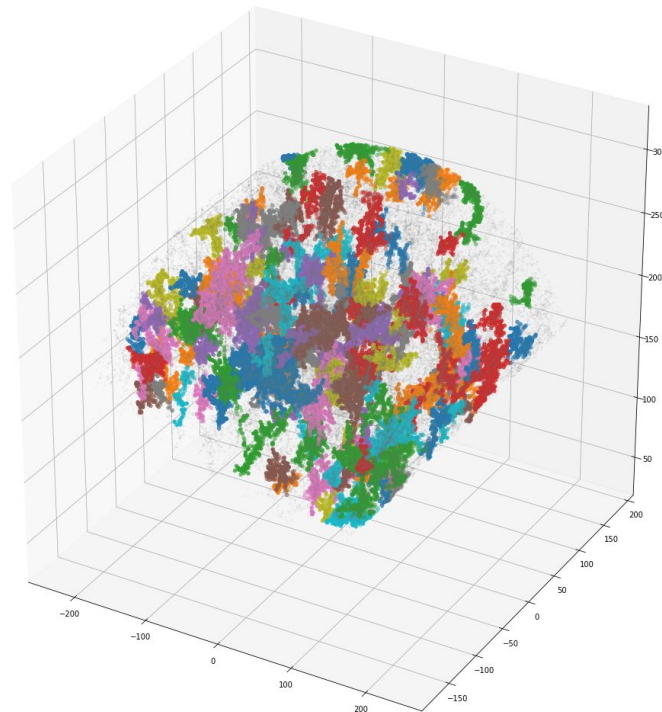
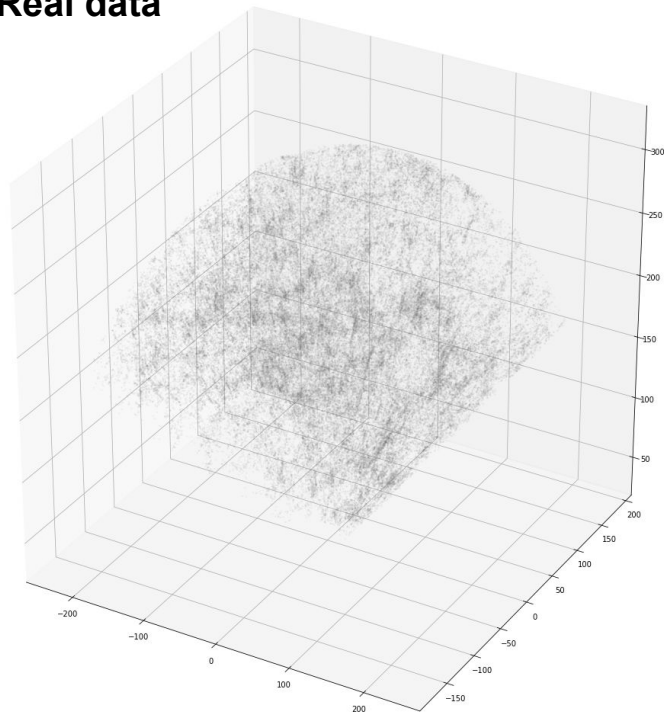
Hierarchical



Check specific large scale structure in clustering results (**MoM** results)

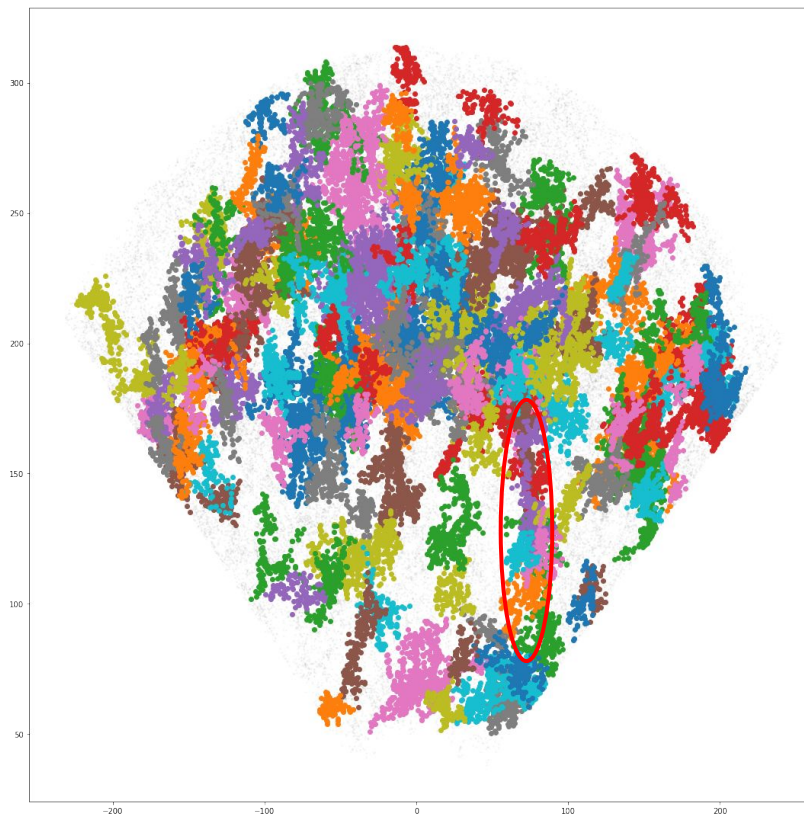
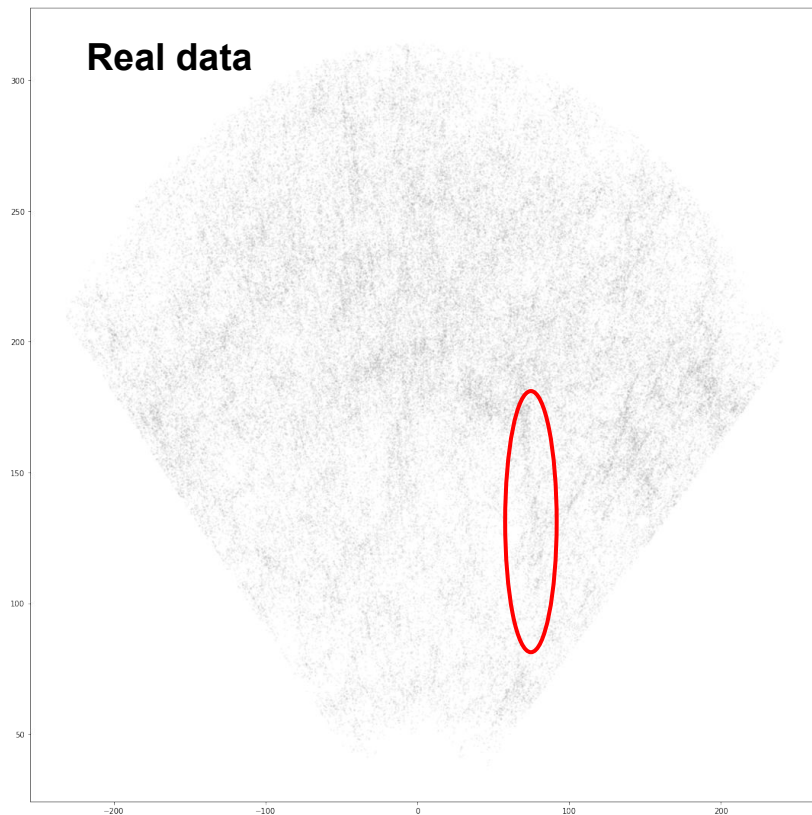
- only cluster of **more than 100 galaxies** are represented

Real data



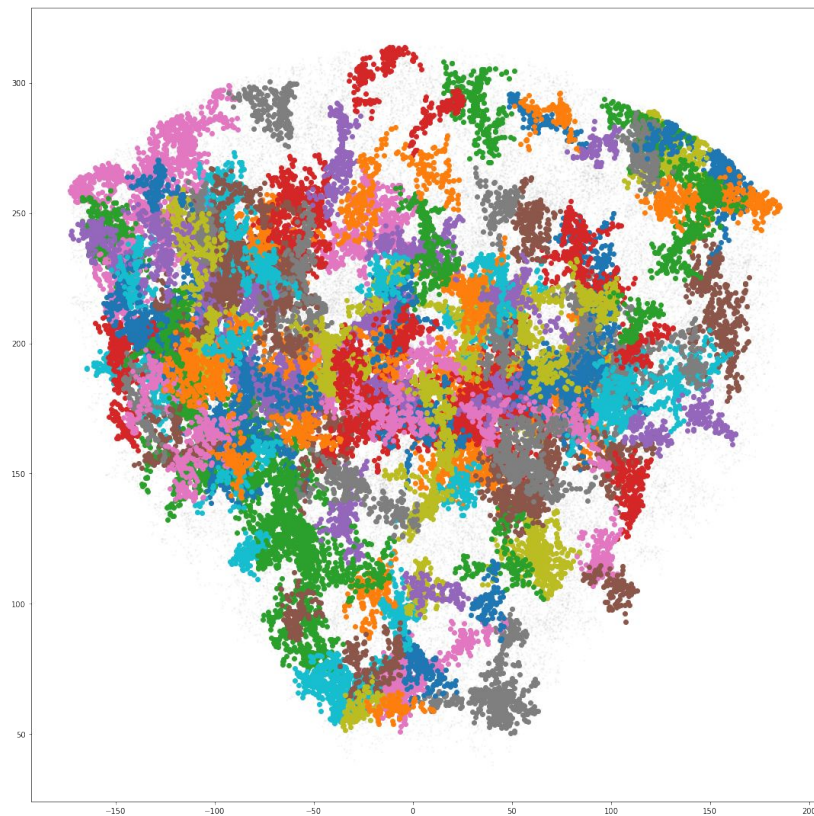
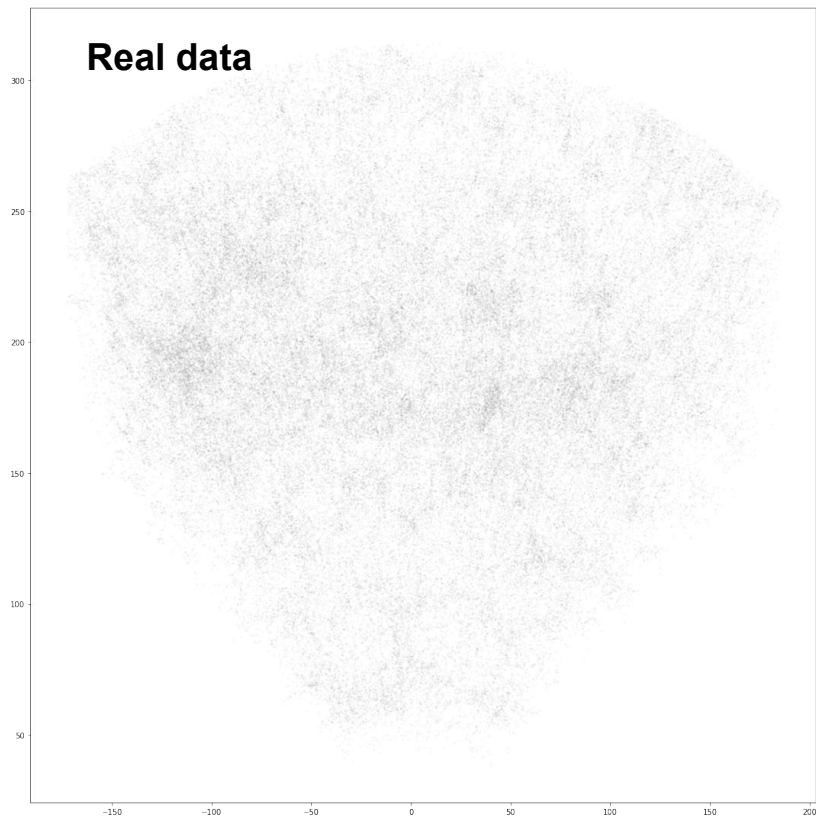
Check specific large scale structure in clustering results (**MoM** results)

- only cluster of **more than 100 galaxies** are represented



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- only cluster of **more than 100 galaxies** are represented

