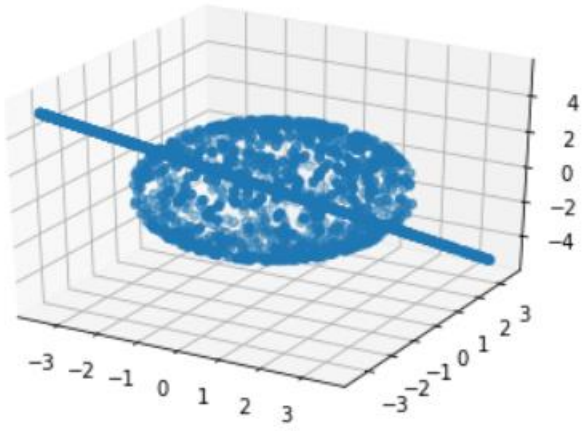
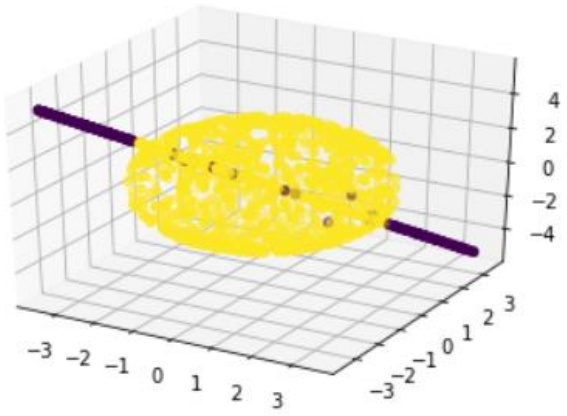
I simulated a model consisting of two parts, the first is 1000 data points in a line and the other is 1000 data points in a sphere. The plot is showed below



Then I apply the OWL method using weights mentioned in paragraph 3.3 of your paper and do the clustering. In the weights, $\Delta = 0.01, \lambda = 0.0001$. Here is the result.



Then I check the coefficients for each points and I find that for any point on the sphere, its coefficients are all 0. There also exists some points on the line with all-0 coefficients. I can not understand this result. All zero means this optimization problem does not have a solution.

So I am wondering if this is a normal result or I write the wrong code or choose the wrong parameters. Have you ever met this before and how do you explain or solve it? Thanks for your help!