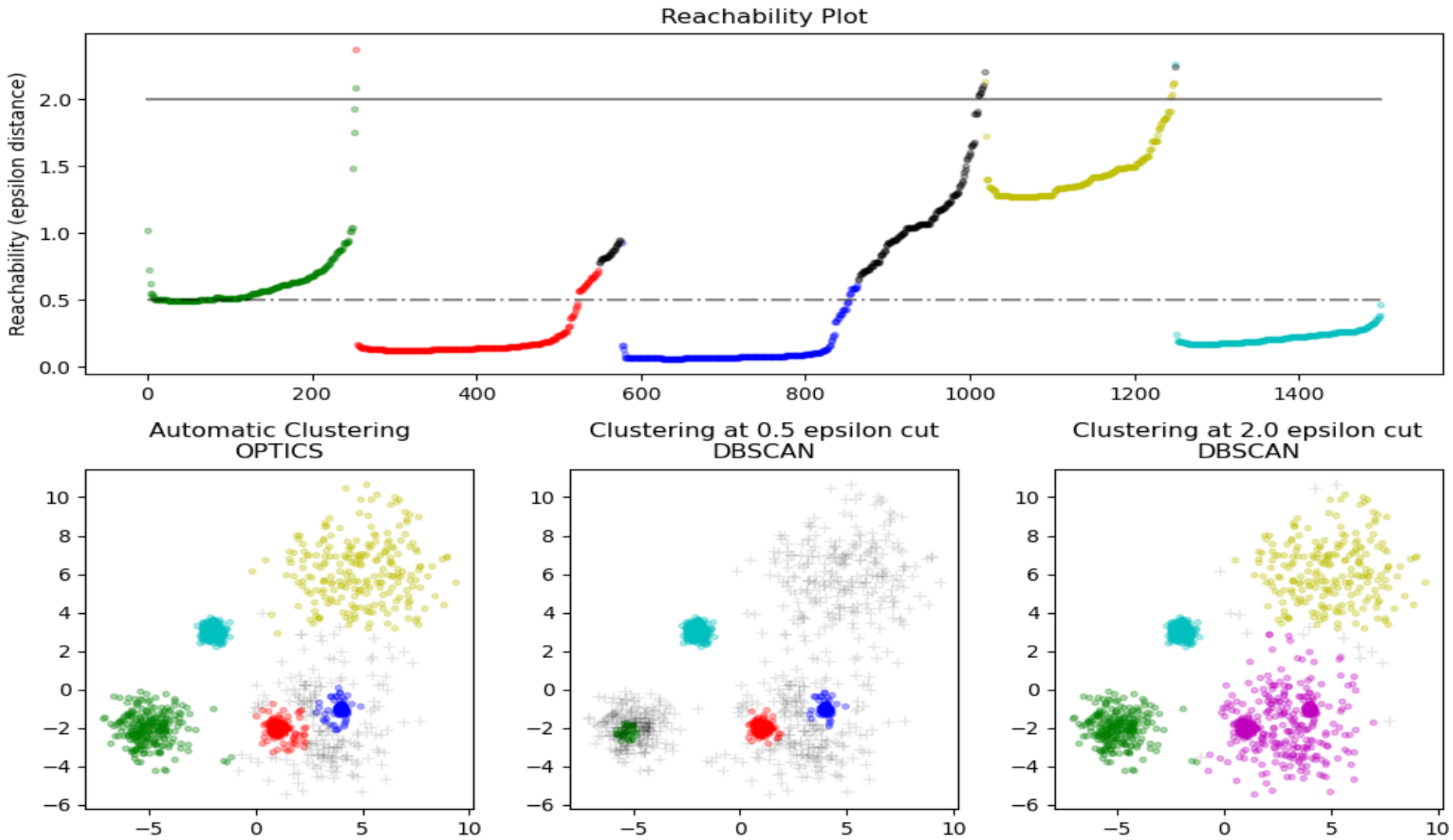
OPTICS ALGORITHM

CLUSTERING

OPTICS CLUSTERING

1. It is similar to DBSCAN, but it is more flexible.
2. Set one fixed distance (called **eps**) to define how close points need to be to form a cluster.
3. It allows a **range** of distances for this instead of one fixed value. This makes OPTICS better at finding clusters of different sizes or densities.
4. It creates a **reachability graph**
5. If you run OPTICS with the maximum distance (max_eps) set to infinity, it builds the reachability graph for the entire dataset.
6. You can then "re-run" clustering for any specific eps value (like DBSCAN) using the stored graph, without recalculating everything.
7. Setting a smaller max_eps reduces the size of neighborhoods , making the algorithm faster.


Reachability Plot
Reachability (epsilon distance)
0.0
0.5
1.0
1.5
2.0
0
200
400
600
800
1000
1200
1400
Automatic Clustering
OPTICS
Clustering at 0.5 epsilon cut
DBSCAN
Clustering at 2.0 epsilon cut
DBSCAN
10
8
6
4
2
0
−2
−4
−6
−5
0
5
10