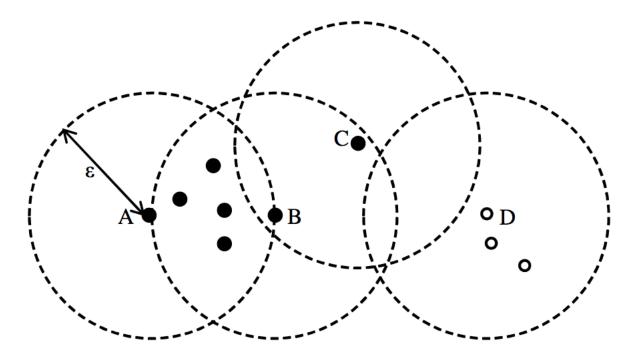
## **DBSCAN**



### **DBSCAN** Advantages

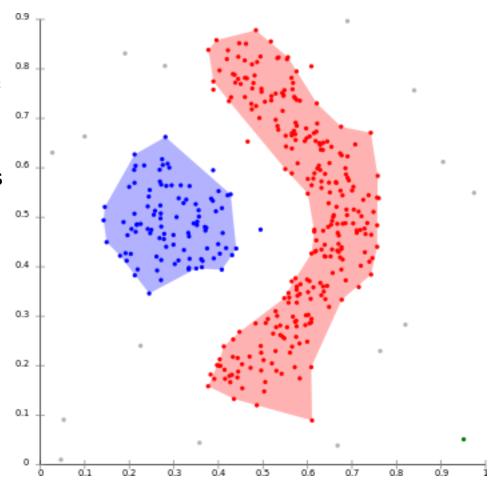
Finds non linearly separable clusters

No need to assume a fixed number of clusters

No dependence on starting conditions

Only two parameters: distance threshold minimum neighbors

Amenable to spatial indexing techniques: O(n log n)



http://commons.wikimedia.org/wiki/File:DBSCAN-density-data.svg

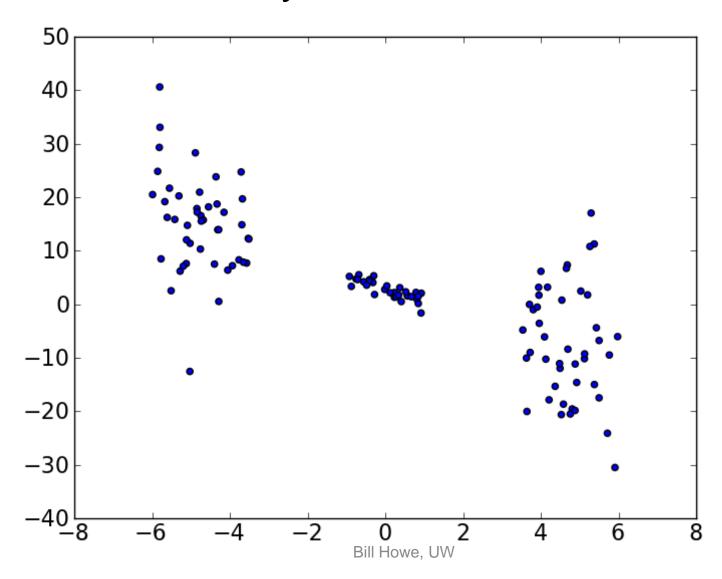


#### **DBSCAN** Disadvantages

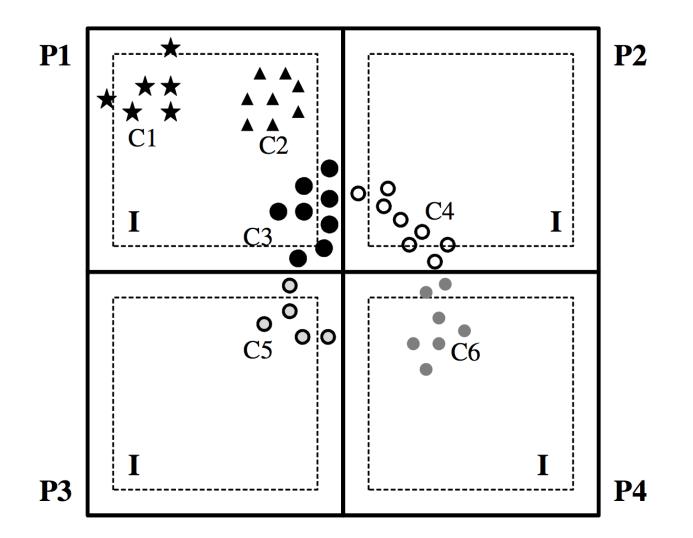
Sensitive to Euclidean distance measure problems (But so is k-means)

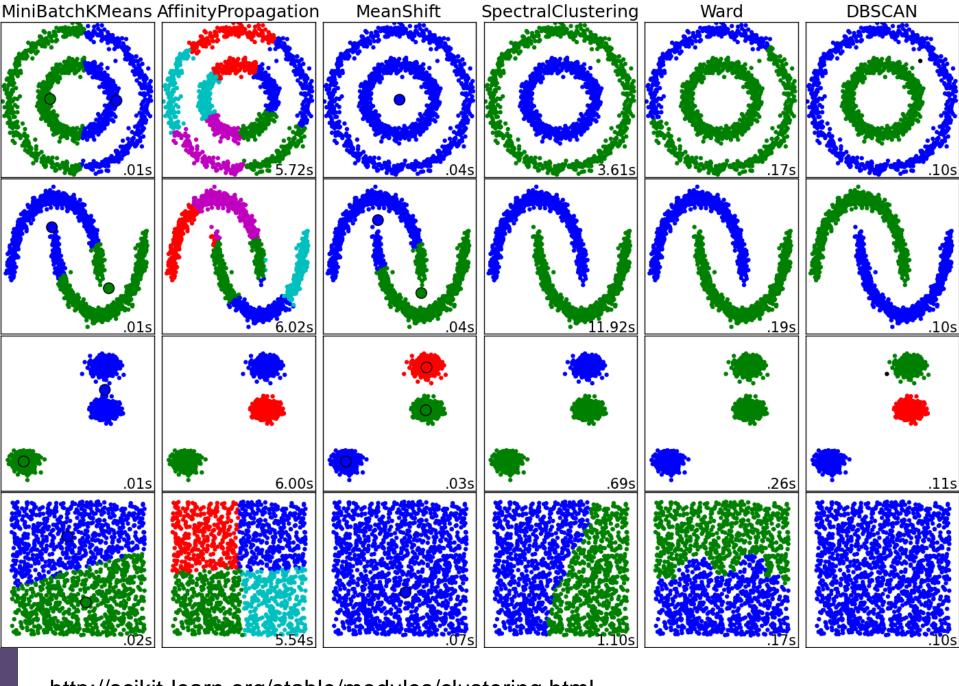
Variable density can be a problem Related to heteroskedasticity

## Variable density



# Parallelizing DBSCAN





http://scikit-learn.org/stable/modules/clustering.html