**OVERVIEW**

Core decomposition partitions the graph in a hierarchical nested manner

Assume an "expensive" algorithm C e.g., Spectral Clustering as a black box

*It is less expensive to compute in sections of the data separately*

Utilize the vertical partition of k-core decomposition as incremental input to C

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**THE ALGORITHM**

Procedure: **CoreCluster**($G_i$)

Input: A graph $G_i$

Output: A partition of $U(G_i)$ into clusters.

1. $S = \emptyset$
2. $i = 0$
3. Let $C_1, C_2, \ldots, C_k$ be the core expansion sequence of $G_i$
4. For $i = 0, \ldots, k$, let $G_i$ be the k-core of $G_i$
5. Let $S = \emptyset$
6. Let $A_i = \bigcup_{C \in S} (C \setminus \{i\})$
7. For $i = 1$ to $k$ do
8. 
9. 
10. Return $A_1 \cup \ldots \cup A_k$.

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**THE RESULTS**

- Execution time
- Artificial data with ground truth
- Real data (Facebook)