

Plan for writing:

meetings in Jan / Feb on individual topics

(I'm not here much until 18 Jan)

Email me when your group is ready for a discussion

Report deadline: 29 Feb 2012

Clues for heuristic for aggregation:

e.g. community detection eg Mark Newman

(paper & book Intro to Networks 2010)

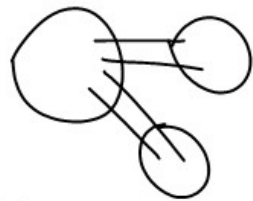
modularity of a decomposition of an undirected graph

$c_i$  = community that node  $i$  belongs to

$$M = \frac{1}{m} \sum_{i,j} (A_{ij} - \frac{k_i k_j}{m}) \delta(c_i, c_j)$$

degree of node  $i$

Then attempt to maximize  $M$  over partitions



A top-down approach

Related ideas: 2nd eigenvector of graph

Laplacian can be used to partition into 2 pieces

Hierarchical clustering (bottom-up)

e.g. Newman's book

Particular easy road



networks: highway hierarchies

Sander & Schultes (Kalambe) top-down

