

randomizing approach

random stub matching (RSM)

☒ edges are assigned to sites given fixed sequence $\mathbf{d} = (d_1, \dots, d_n)$

 probability that an edge is assigned to site $(i, j) \in R$

$$Q_{ij} = \begin{cases} \binom{d_i}{2} / \binom{2m}{2} & \text{for } i = j \\ d_i d_j / \binom{2m}{2} & \text{for } i < j \end{cases}$$

independent assignments (IEA)

☒ Edges are independently assigned to vertex pairs in site space R

 edge assignment probabilities $Q = (Q_{ij} : (i, j) \in R)$

 **M** is multinomial distributed with parameters n and Q

 **Statements for analysing local and global structures are easily derived**

 can be used as an approximation to the RSM model

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random multigraph models

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independent edge assignments (IEA)

- ✓ edges are independently assigned to vertex pairs in site space R
- ✓ edge assignment probabilities $\mathbf{Q} = (Q_{ij} : (i, j) \in R)$
- ✓ \mathbf{M} is multinomial distributed with parameters m and \mathbf{Q}
- ✓ moments of statistics for analysing local and global structure are easily derived
- ✓ can be used as an approximation to the RSM model

random multigraph models