

All possible transitions from \mathbf{x}_n

Transition Probability (ERGM)

$$\mathbb{P}(\tilde{D}_n \mid \mathbf{x}_n, \Theta) = \sum_{\mathbf{x}} \mathbb{P}(\mathbf{x} \mid \mathbf{x}_n) \prod_{m \in \mathbf{O}(n)} \mathbb{P}(\tilde{D}_m \mid \mathbf{x}_m)$$

Model Parameters

Vector of Sufficient Statistics

$$\mathbb{P}(\mathbf{x} \mid \mathbf{x}_n) = \frac{\exp\{\Theta^t s(\mathbf{x}, \mathbf{x}_n)\}}{\sum_{\mathbf{x}'} \exp\{\Theta^t s(\mathbf{x}', \mathbf{x}_n)\}}$$

Normalizing Constant