

PROVE THAT THE SUGGESTED DISTRIBUTION IS

STATIONARY:

PROB. OF ENDING UP AT STATE i AFTER ONE STEP;

ASSUMING THAT YOU ARE ALREADY IN PROPOSED

STATIONARY DISTRIBUTION w :

$$\sum_{j \sim i} w_j \cdot P_n(\text{GO FROM } j \text{ TO } i) = \sum_{j \sim i} \left(\frac{\deg(j)}{S} \right) \cdot \frac{1}{\deg(j)} = \sum_{j \sim i} \frac{1}{S} = \frac{\deg(i)}{S}$$

WEIGHTED CASE:

$$\sum_{j \sim i} w_j P_n(\text{GO FROM } j \text{ TO } i) = \sum_{j \sim i} \frac{w(j)}{S} \cdot \frac{w(i, j)}{w(j)} = \sum_{j \sim i} \frac{w(i, j)}{S} = \frac{w(i)}{S}$$