State-space coverage:

- Consider the underlying state transition system

State space

State transition (Event)
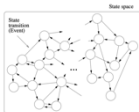
- Suppose the simulation is run for time T at (approximate) equilibrium and spends time T_s in state s
- T_s/T is then an estimate, $\hat{p}_s$, of (the unknown) state probability p_s
- Remark: Measures such as W could be computed directly, or in terms of $\hat{p}_s$ — the answer will be the same
- How good is the estimate $\hat{p}_s = T_s/T$? It clearly depends on T, but also on the distribution $p_s, s \in S$ itself:
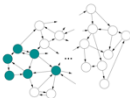
Parameterisation 1: Simulation time spent in a small number of states

Parameterisation 2: Simulation time spent covering a large number of states

Filled states: largest subset $S' \subseteq S$ s.t. $inf\{p_i \mid i \in S'\} \geq sup\{p_j \mid j \in S - S'\}$ and $\sum_{i \in S'} p_i \leq p_{max}$ for some p_{max}

- For the same simulation time the C.I. for the left model (light load) should be narrower than the right (heavy load)