



S 1. Fig. **Dependence of the value n^* on the chosen threshold S_Θ** Fraction of active neurons n^* vs the synaptic strength, for several threshold definitions. A neuron is considered silent whenever it does not spike at least S_Θ -times during the observation time. Panel a) for $\Delta V = 1$ mV and b) for $\Delta V = 5$ mV. The system is left to evolve during 10^7 spikes, after discarding 10^5 spike events of transient. Other parameters used in the simulation: $K = 20$, $N = 400$ and $\tau_\alpha = 20$ ms.