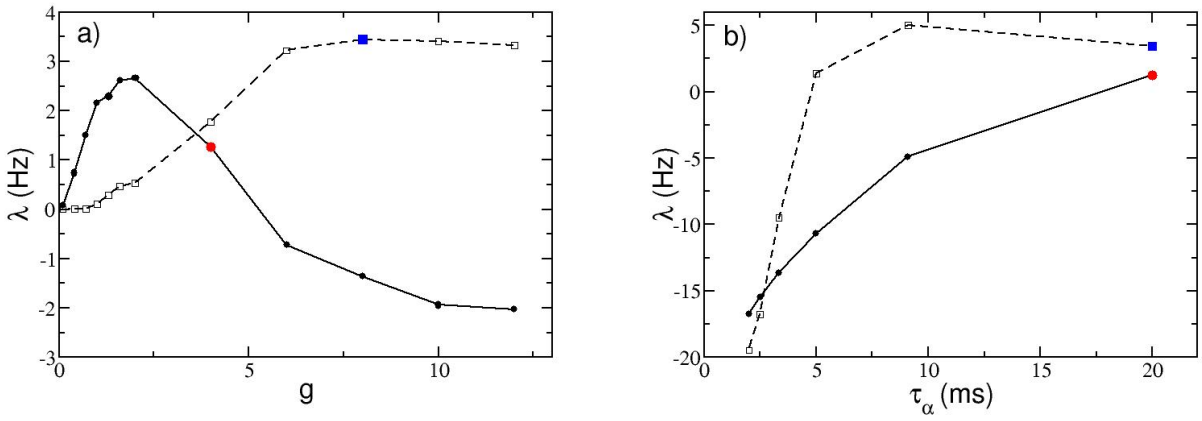

S 3. Fig. **Linear stability analysis**. a) Maximal Lyapunov exponent λ at a fixed $\tau_\alpha = 20$, as a function of the synaptic strength for $\Delta V = 1$ mV (continuous line, filled circles) and $\Delta V = 5$ mV (dashed line, empty squares). b) Maximal Lyapunov exponent λ as a function of the pulse duration τ_α for the parameters $\{\Delta V, g\} = \{1\ \text{mV}, 4\}$ (continuous line with filled circles) and $\{5\ \text{mV}, 8\}$ (dashed line with empty squares). In both panels, the blue filled square indicates the triad $\{\Delta V, g, \tau_\alpha\} = \{5\ \text{mV}, 8, 20\ \text{ms}\}$, and the red filled circle to $\{\Delta V, g, \tau_\alpha\} = \{1\ \text{mV}, 4, 20\ \text{ms}\}$; these values are associated to the maximum values of Q_0 obtained for excitability distributions with fixed width ΔV. The tangent space (S1-S3 Eqs) is evolved during a period corresponding to 10^6 spikes, after discarding a transient of 10^5 spikes. Other parameters used in the simulation: $K = 20$, $N = 400$.