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Synchronization in Inhibitory Networks
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We consider a biophysical model describing a network of inhibitory neurons and investigate conditions under which certain specific modes of activity can be observed. By applying techniques from dynamical systems theory we derive a pared-down model that captures the essential features of the model interneuron and also allows an analytical treatment. We then consider a pair of such neurons coupled through GABA-A type synapses and describe how the synaptic time scales interact with the intrinsic dynamics to generate various stable configurations depending on initial conditions and parameters.