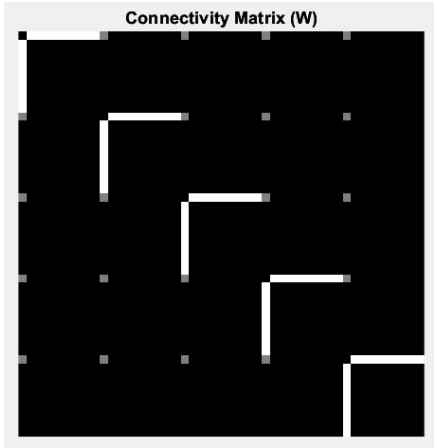
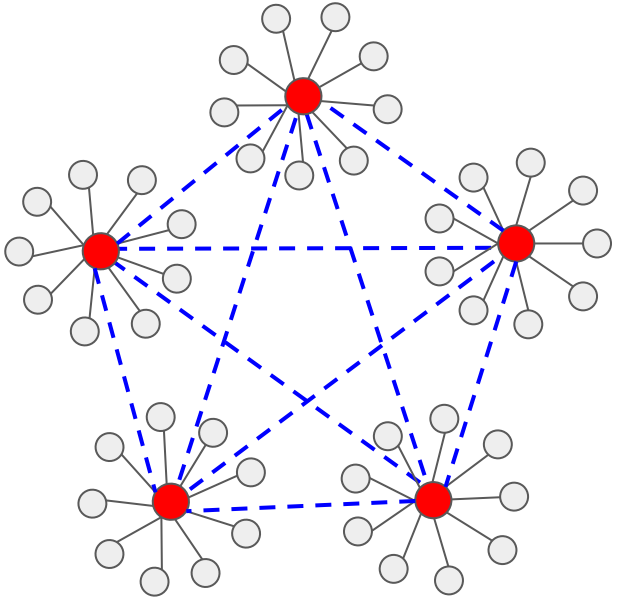
Effect of hub network connectivity on network firing patterns

- 50 neurons are divided into 5 regions
- In each region, 1 hub (central) neuron is connected with 9 peripheral neurons

Values used

- gsyn=7
- taus=5
- I_app = 3.5 ± 0.5
- **gsyn_k**: the ratio of inter-hub synapse & inter-hub synapse (varied between 0 and 1)





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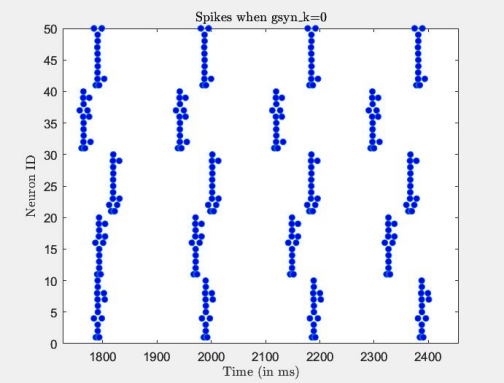
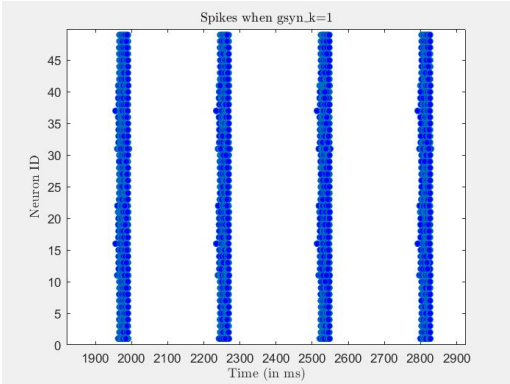
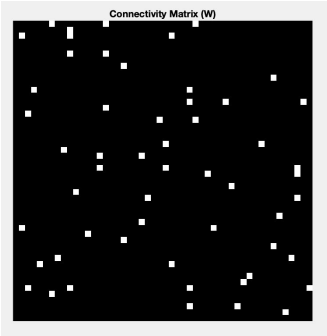
gsyn_k = 0



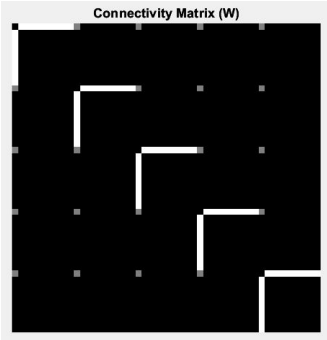
gsyn_k = 1



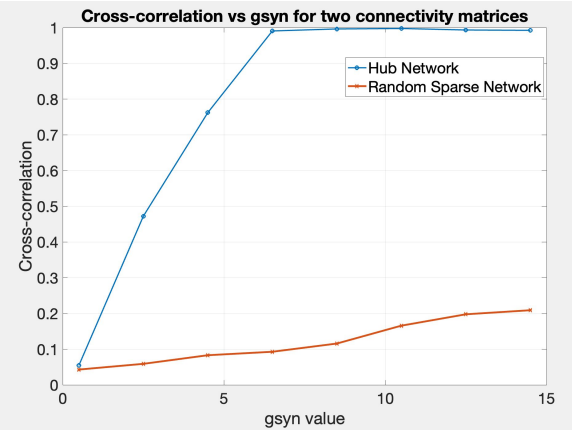
Random Sparse Network



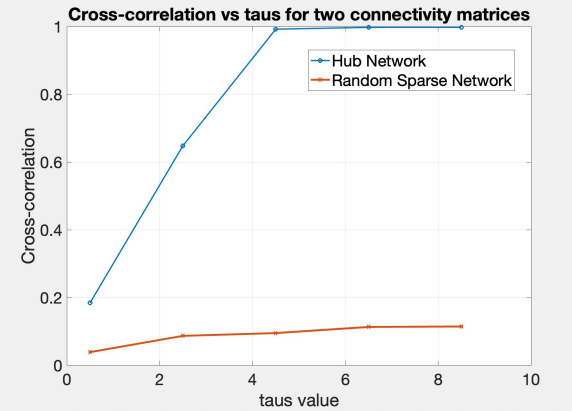
Hub Network



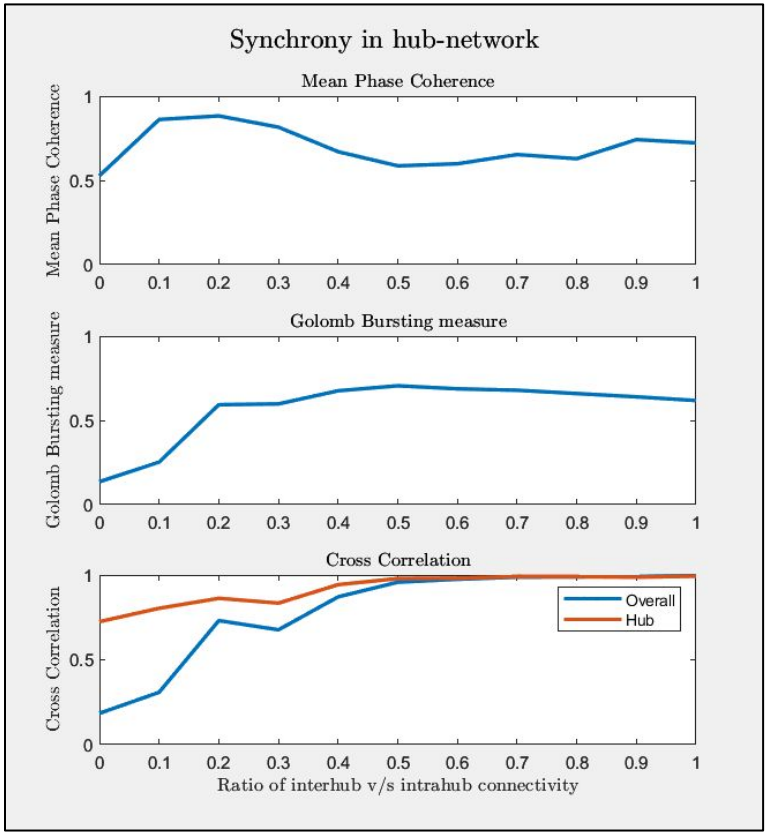
gsyn increase



taus increase



When hubs are connected



When peripheral neurons are connected