

This simulation code set includes the following files:

- Main_Loop_Computation.m
- assemblyComputation2.m
- assemblyComputation3.m
- assemblyComputation4.m
- learningHebbian2.m
- learningHebbian3.m
- learningHebbian4.m
- patternMatching.m
- SNN_initiation0.m
- SNN_stimulation.m
- SNN_simulation.m

"Main_Loop_Computation.m" is the main script that runs the simulation. All simulations were performed by this script.

"assemblyComputation N .m", **"learningHebbian N .m"**, and **"patternMatching.m"**, with $N = 2, 3$, and 4 (the size of loop structures), are auxiliary codes to confirm theoretical predictions, in the basic neural activity model, running in **"Main_Loop_Computation.m"**.

"SNN_initiation0.m", **"SNN_stimulation.m"**, **"SNN_simulation.m"**, and **"patternMatching.m"** are auxiliary codes to confirm theoretical predictions, in spiking neural networks, running in **"Main_Loop_Computation.m"**.