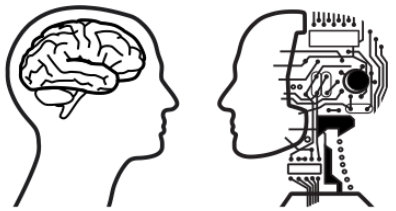
Mind, Brain, and Models 2022-23



CNCR

CNCR workshop activities.

Dynamic neural field

In the lecture three possible regimes or asymptotic states of dynamic neural fields were discussed: growing activity, decaying activity and memory activity. The aim of this lab is to reproduce these states with the m-file available in Canvas. The three states were characterized as follows:

Growing activity: The whole dynamic field will become active in this regime despite the removal of the external input.

Decaying activity: The activity decays after the removal of the external input.

Memory activity: The active area in the map stays active even when the external input is removed.

The dynamic neural fields produce these regimes by choosing an appropriate parameter setting.

In this lab, your **first** task is to find values of *sigma*, *A* and *C* for the three regimes. All other parameters should not be changed. Also note that the m-file already contains a parameter setting which can be used as starting point for this exercise. You should seek to identify the values of the parameters for each regime together with a plot of the simulation result.

Your **second** task is to insert comments in the current m-file. The current m-file contains comment lines with question marks. You should replace the question marks with text concisely explaining the MatLab code between these lines and the lines with hyphens. The comments should not be longer than 80 characters in total. In your explanations, you can assume that the user/reader has attended the lecture and read the handouts.

The comments marked with MORE CHALLENGING are more difficult, which you are likely not to have time to fully complete during the class.