Fast Synapsis Hindmarsh-Rose

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Introduction

This document shows the results from two programs that simulates the fast synapse between two Hindmarsh-Rose neurons.

Parameters

The parameters choosed are based on the file *"pract3-15.pdf"* inside the directory **`resources/`**.

The values $S_{fast} = 0.44$, $V_{fast} = -1.66$, $E_{syn} = -1.92$ for Hindmarsh-Rose synapses, are obtained from **Table 2**.

The **Table 3** of the document shows the values of maximal conductance, and we can see that LP neuron and PY neuron have a both values between them. So neuron1 will be LP and neuron2 PY, being $gfast_1 = 0.241$ and $gfast_2 = 0.186$.

The rest of the values ($timeincrement$, $x_{initial}$, e, m and S) for the model, are the same used on the part 2 of the same document.

Graphs

On the following pages are the graphs for the different simulations:

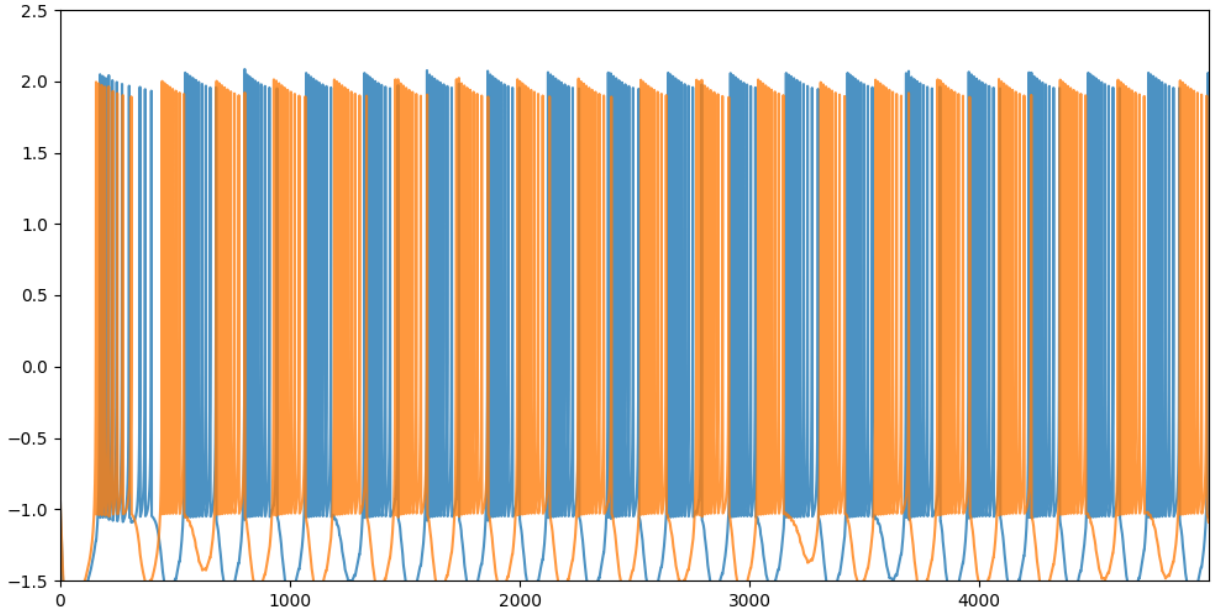

Figure 1: Simulation regular

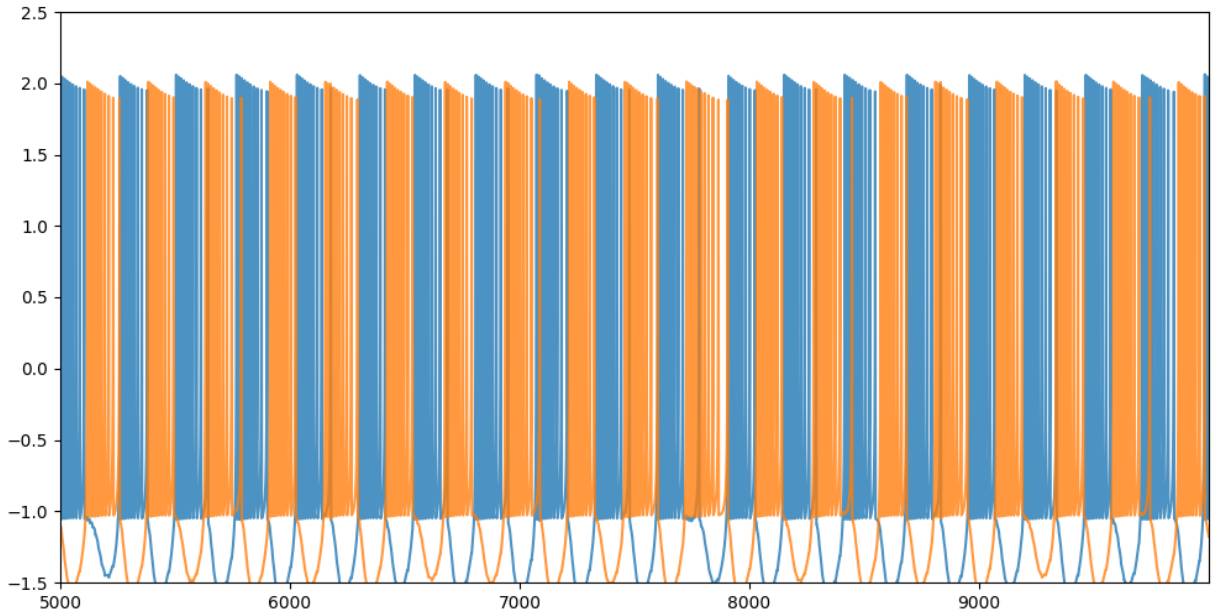

Figure 2: Simulation regular continue

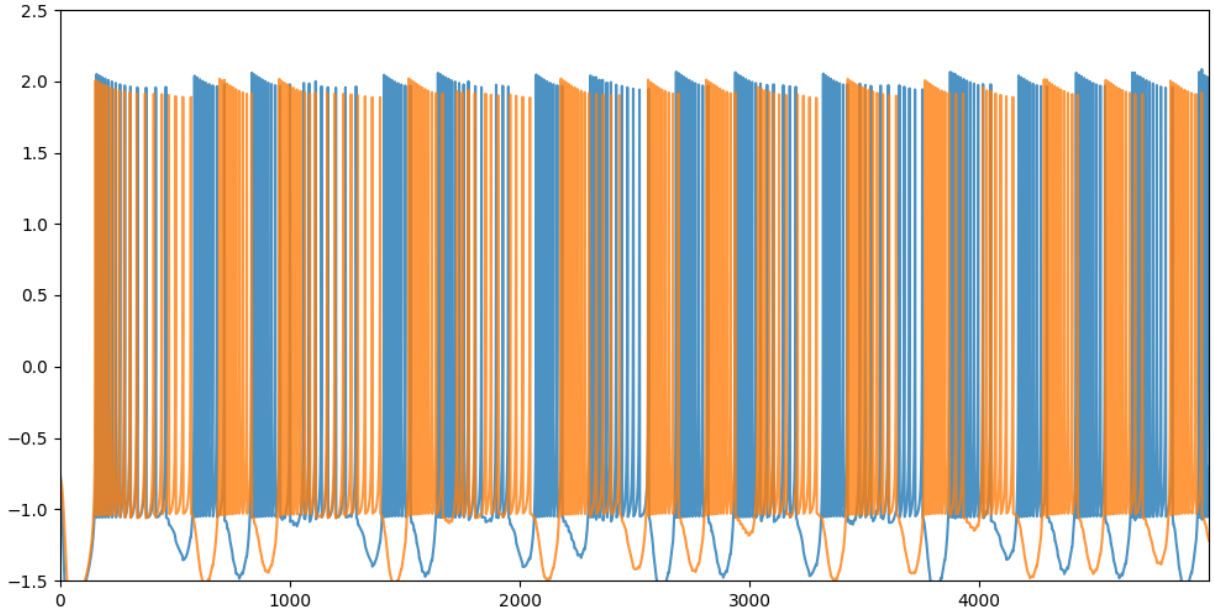

Figure 3: Simulation chaotic

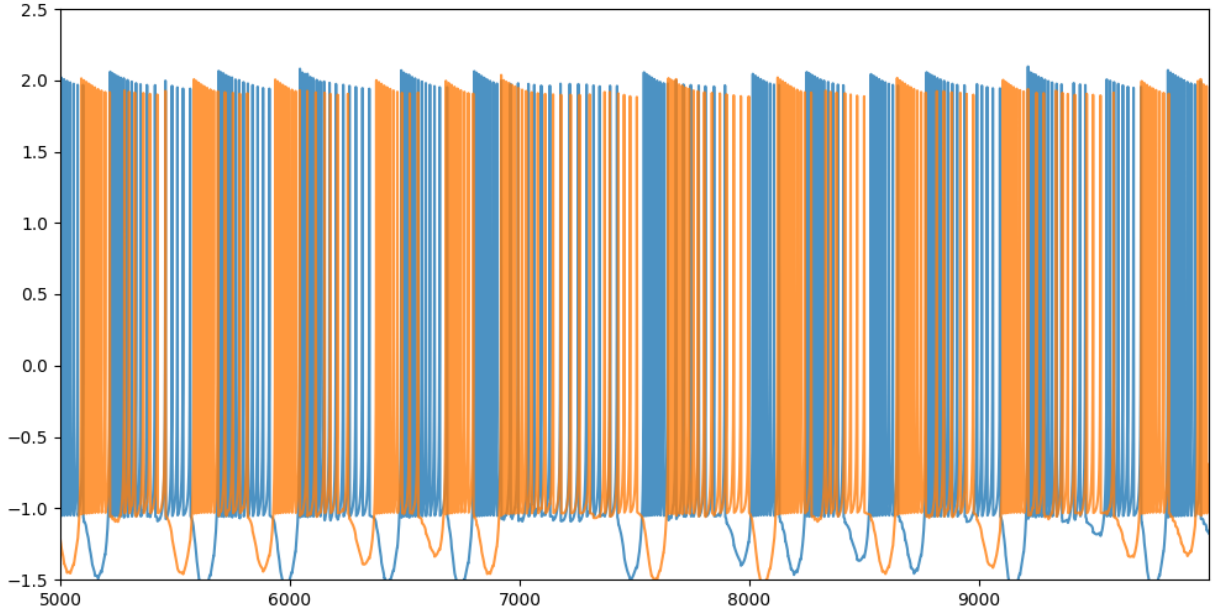

Figure 4: Simulation chaotic continue