

Fast Synapsis Hindmarsh-Rose

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Introduction

This document shows the results from two programs that simulates the fast synapsis 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 synapsis, 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 $g_{fast_1} = 0.241$ and $g_{fast_2} = 0.186$.

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:

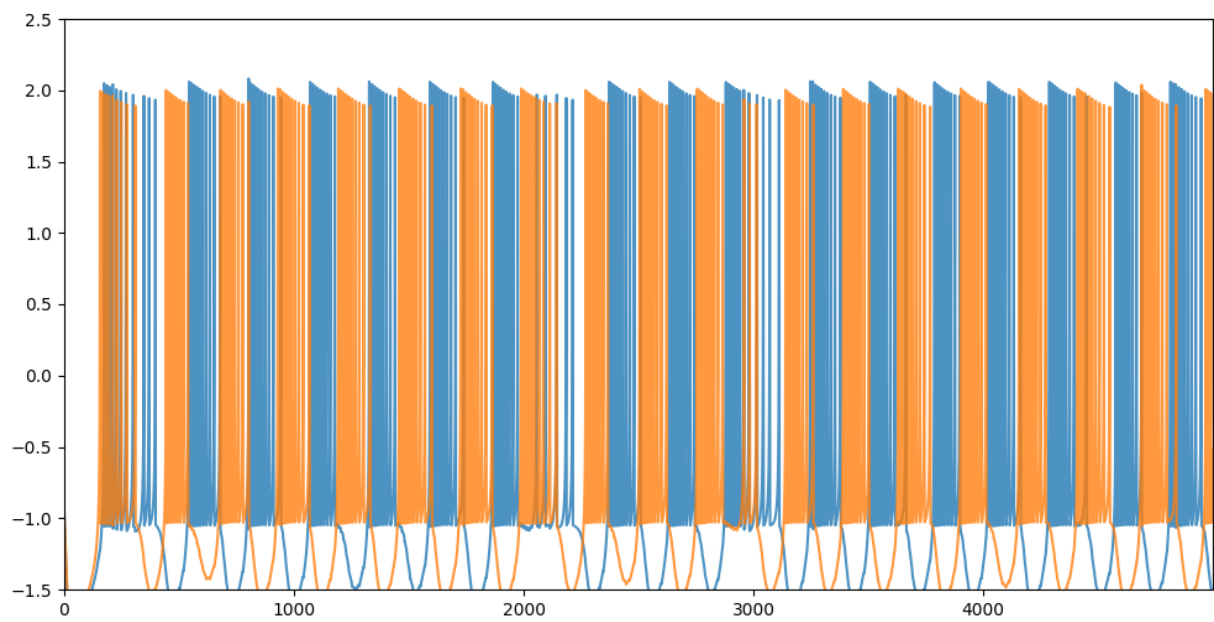


Figure 1: Simulation regular

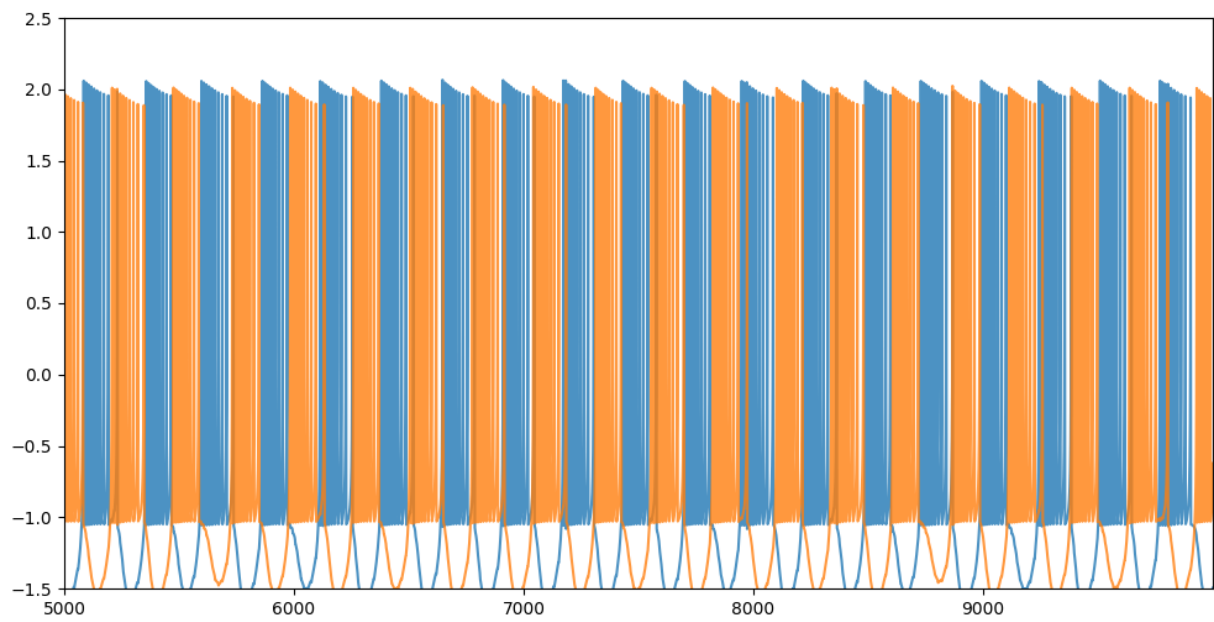


Figure 2: Simulation regular continue

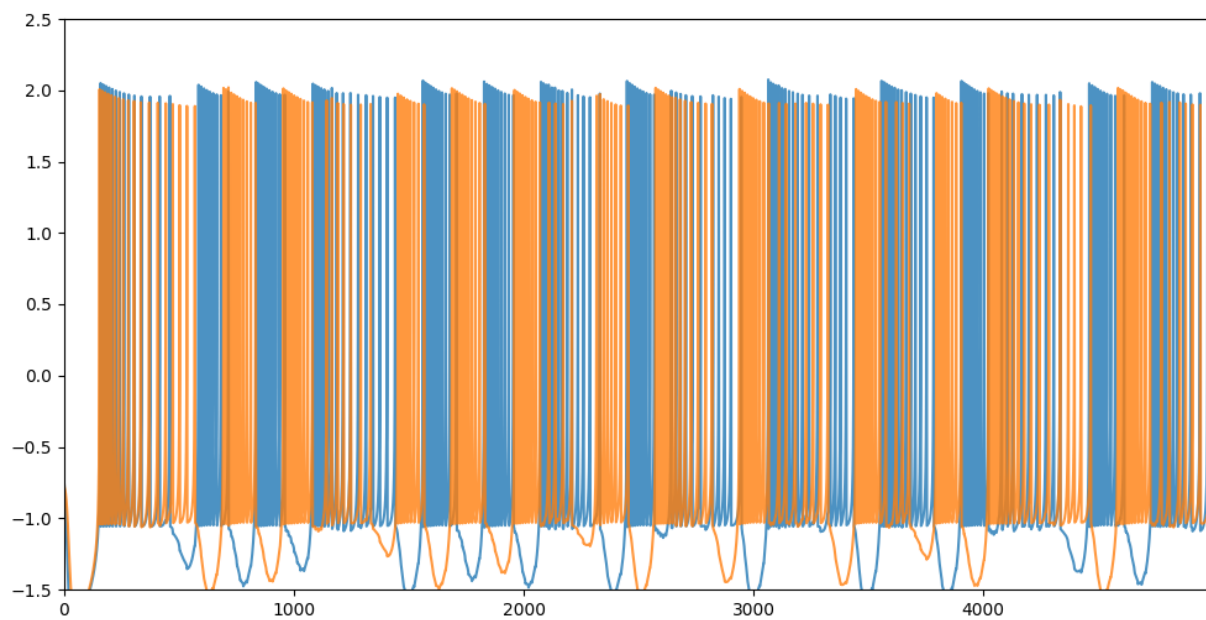


Figure 3: Simulation chaotic

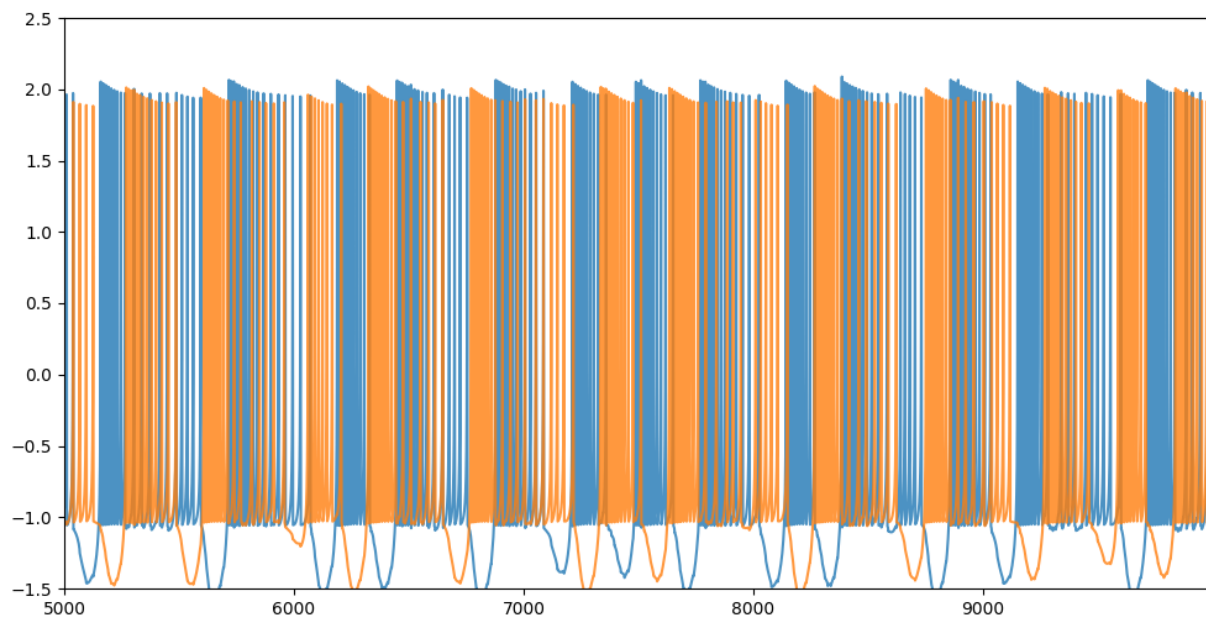


Figure 4: Simulation chaotic continue