Fast Synapsis Hindmarsh-Rose

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Introduction

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

Parameters

The parameters choosed are inspired on the article Network Stability from Activity-Dependent Regulation of Neuronal Conductances

The **Table 3** of the article 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 $gfast_1 = 0.02$ and $gfast_2 = 0.005$.

It is also mentioned on the same article that $S_{fast} = 0.2mV$ and $V_{fast} = -50mV$, this values (passed to V) are equal to $S_{fast} = 0.0002mV$ and $V_{fast} = -0.05mV$.

Graphs

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

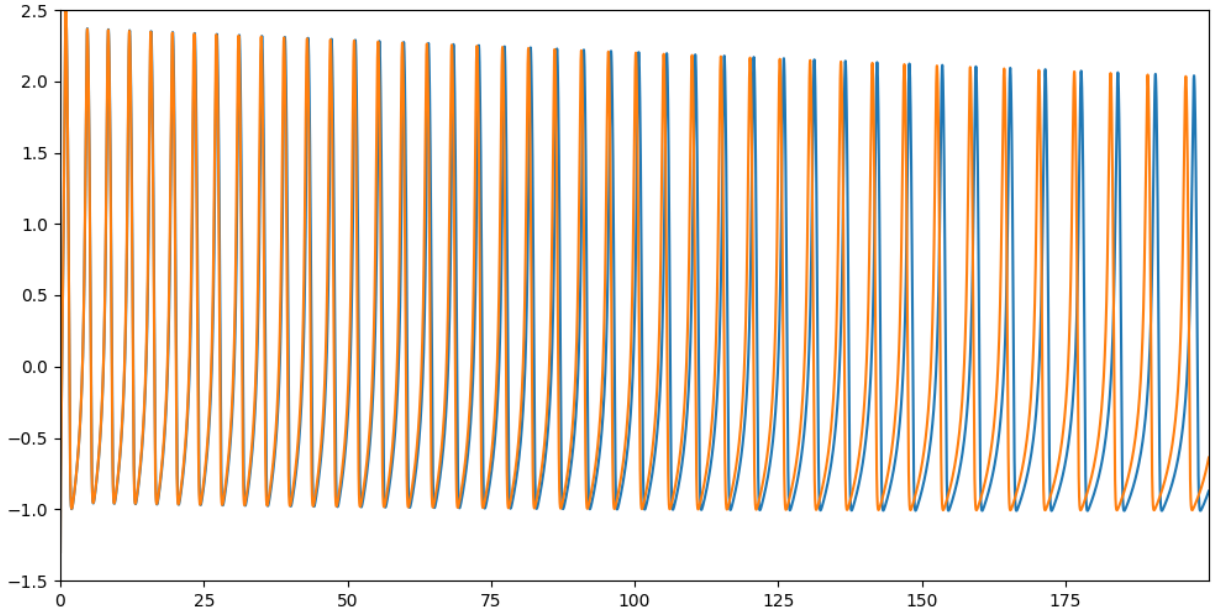

Figure 1: Simulation regular

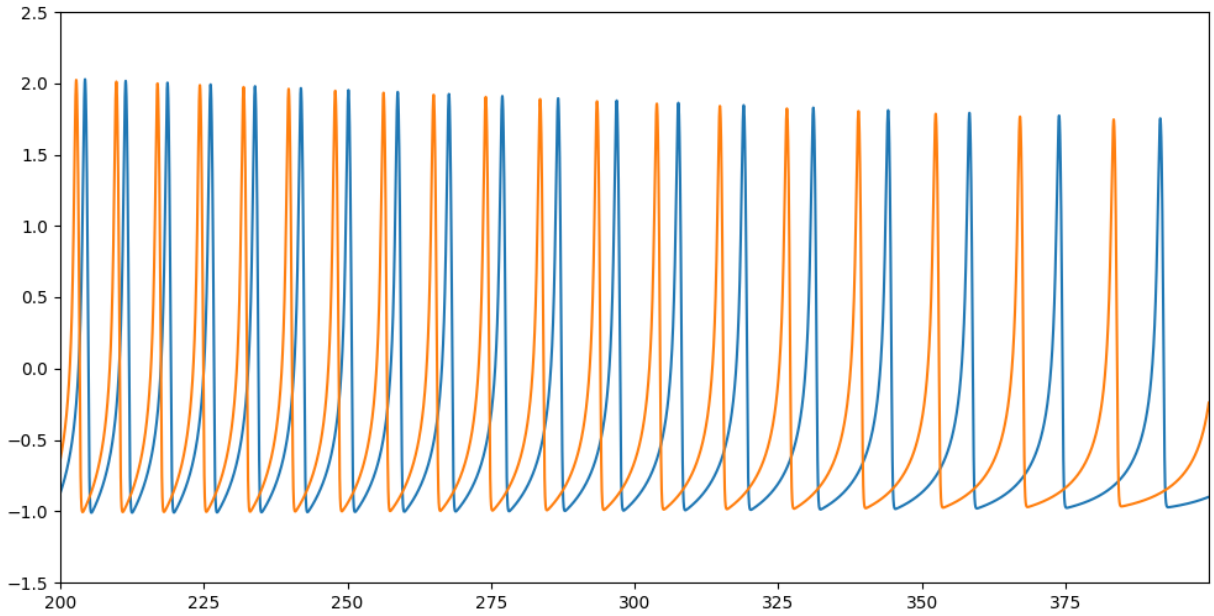

Figure 2: Simulation regular continue

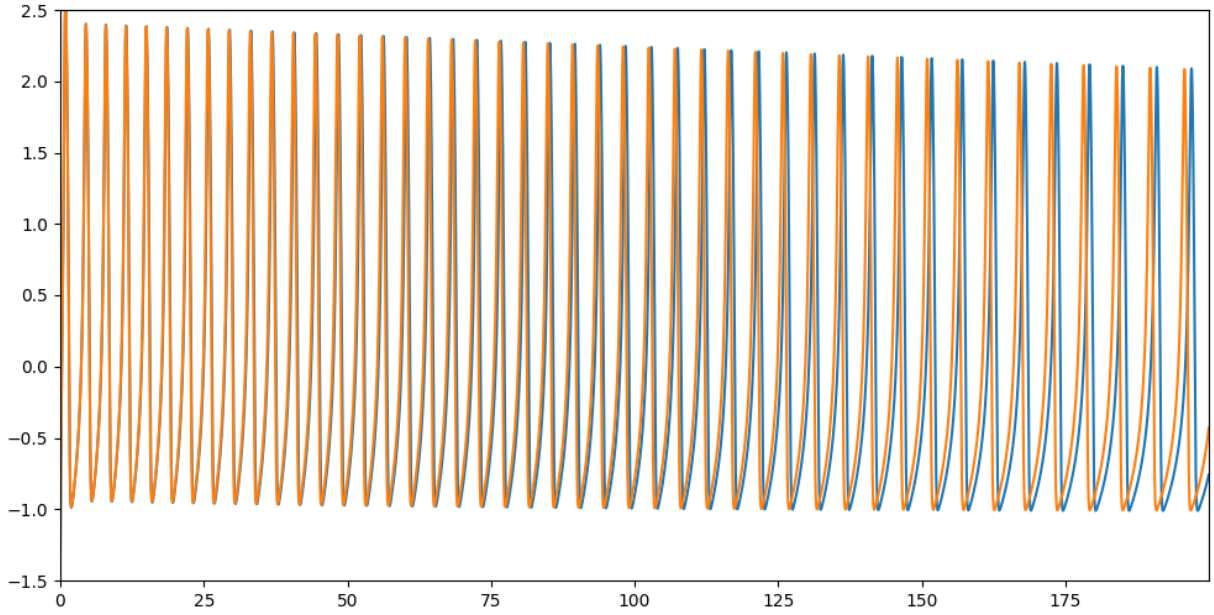

Figure 3: Simulation regular

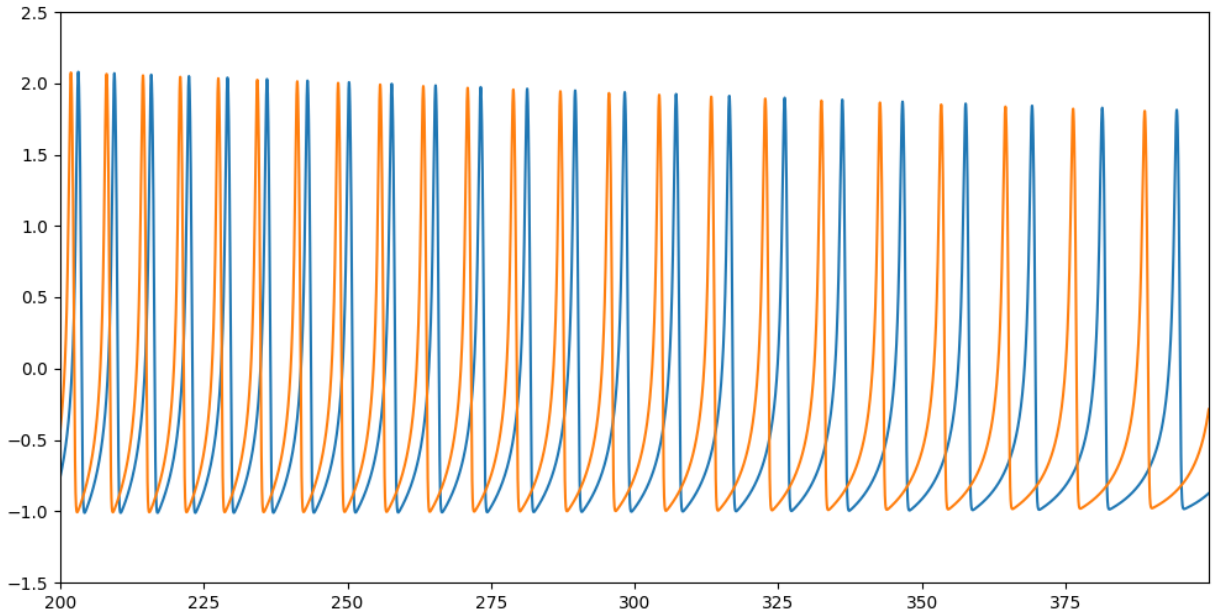

Figure 4: Chaotic regular continue