# BrainScaleS-2 Neuromorphic Simulation Example

## Overview

This document summarizes a simulation example for BrainScaleS-2 hardware. The experiment demonstrates how spiking neural networks behave in a neuromorphic environment, featuring membrane voltage dynamics and spike-based communication between neurons.

## Expected Output

When the provided demo notebook (e.g., `hwdemo.ipynb`) is executed on BrainScaleS-2, the system will perform the following tasks:  
- Load a trained neural network model  
- Evaluate the model on a test dataset (e.g., MNIST or Yin-Yang)  
- Simulate neuron dynamics and generate spike outputs  
- Compute and display classification accuracy  
  
Sample log output:  
Training 0 epochs -> duration: 0.234 seconds  
test accuracy 0.943

## Simulated Results

Below is a visualization of what you can expect in terms of neuron behavior during the simulation. The top plot shows the membrane voltage over time for a single neuron, while the bottom plot displays a spike raster for 5 neurons.

Reference link: https://github.com/JulianGoeltz/fastAndDeep

