A simple two parameter distribution for modelling neuronal activity and capturing neuronal association

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Abstract

Recent developments in electrophysiological technology have lead to an increase in the size of electrophysiological datasets. Consequently, there is a requirement for new analysis techniques that can make use of these new datasets, while remaining easy to use in practice. In this work, we fit the Conway-Maxwell-binomial distribution to spiking data read from a mouse exposed to visual stimuli.

1 Introduction

Motivate by pointing out how much computational power it can require to calculate nth order correlations.

Point out that we don't necessarily need to measure correlations anyway.

2 Results

3 Discussion

4 Data

Details from data cortex lab here.

5 Methods

Details about all kinds of things here.

5.1 Binning data

We binned the spiking data into very small bins.

6 Discussion

Point out that the Conway-Maxwell-binomial distribution could be used to measure activity and association without having to sort the voltage traces into spikes. That does defeat the purpose slightly, however.

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