

# Nonlinear Analysis of VR Synchrony

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May 18, 2015

# Introduction

Social Synchrony, previous results

# Questions

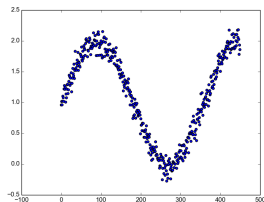
Does nonlinearity matter?

# Data Description

Data: AS Won creativity study, Kinect data  
Dimensionality reduction of Kinect data

# Mutual Information

Intuition, formalism



$$I(x, y) = \sum_{x, y} P(x, y) \ln \frac{P(x, y)}{P(x)P(y)}$$

How to discretize?

# Analytic Signal Methods

Hilbert transform representation, phase not amplitude.

Phase Synchrony Index :  $\gamma = | \langle e^{i(n\phi_x - m\phi_y)} \rangle |$

# Graph-Based Methods

Many ones exist: recurrence matrix, visibility graph, etc etc etc

Reversability: turning this into a transform

Stack graph

# Results

Go see results