

1037-92-28

Krešimir Josić* (josic@math.uh.edu), Department of Mathematics, University of Houston, Houston, TX 77035, and **Eric Shea-Brown, Brent Doiron** and **Jaime de la Rocha**.

Correlation tuning and coding in neuronal networks. Preliminary report.

Recent work shows that spike-to-spike correlations amongst neurons receiving shared inputs increase as as a function of the neurons' firing rates. Thus, if different stimuli evoke different rates, they may also be expected to evoke different levels of correlation: in this sense, rate and correlation are *co-tuned*. I will explore the consequences of this co-tuning for the information that populations of neurons carry about the stimuli. First, the impact of correlation tuning on the Fisher information in the case of a single layer of cells will be considered. Previous work on the subject took into account changes in covariance, but not correlation. The results of an experimental study that illustrates how a single cell can read out information encoded using correlation tuning will be shown. (Received January 01, 2008)