

# 数学与系统科学研究院

## 计算数学所学术报告

报告人: **Dr. Chengcheng Huang**

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报告题目:

**A Neuronal Network Model for  
Context-Dependent Perceptual  
Decision on Ambiguous Sound  
Comparison**

邀请人: 袁亚湘 院士

报告时间: 2015 年 1 月 13 日 (周二)

下午 15:30-16:30

报告地点: 数学院南楼二层 210

会议室

## **Abstract:**

Many natural stimuli contain perceptual ambiguities that can be cognitively resolved by the surrounding context, e.g. preceding stimuli. In audition, preceding context can bias the perception of speech and non-speech stimuli. Here, we developed neuronal network model to account for how preceding auditory stimuli affects our perception of pitch change direction. Our model draws inspiration from a recent psychophysical experiment where listeners experienced opposite percepts (either ascending or descending) of an ambiguous tone pair depending on the spectral positions of the preceding tones. Our recurrent firing-rate network model can detect frequency change of successively played stimuli due to asymmetric inhibition. We propose a novel adaptation mechanism, facilitation of inhibitory synapses, which successfully accounts for the context-dependent perception demonstrated in behavioral experiments.

**欢迎大家参加！**