



EINLADUNG

zum Vortrag im Rahmen des Seminars des SFB/TRR 31

Freitag, 23. November 2012, 14 Uhr c.t.

im Raum H28 / R 2.31 des Med. Campus Magdeburg
und Raum W2 1-143 der Universität Oldenburg,
(per Videoübertragung)

“Pitch judgments in ferrets, and their auditory cortical representations”

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Pitch is the perceptual quality by which we order periodic sounds along a low-to-high scale. It is the basis for melody in music, and is also an important cue in human speech and animal communication.

We understand surprisingly little about how animals make pitch judgments, and the auditory cortical responses that underlie these perceptual decisions. I will discuss studies in which we have been investigating the pitch judgments of ferrets on behavioural tasks while recording extracellular spiking and local field potential (LFP) responses in auditory cortex. We've found that the pitch discrimination thresholds of animals can vary widely across psychophysical tasks – much more so than for human listeners. A small subset of neurons were sensitive to the temporal regularity of our periodic sounds, and these same neurons provided “neurometric” curves that approached ferrets' psychophysical performance on the task. Receiver Operating Characteristic analyses revealed that both spiking responses and LFPs predicted the ferrets' behavioral choice on the task better than the periodicity of the vowels presented. This effect was particularly pronounced during the later time period of the trials, when the ferrets were making their behavioural choice. Therefore, neurons in the auditory cortex, even primary auditory cortex, may not simply reflect the acoustical features of a stimulus, but also represent the perceptual decisions of the animal.