Sonderforschungsbereich/Transregio 31
"Das aktive Gehör"

E I N L A D U N G

zum Vortrag im Rahmen des Seminars des SFB/TRR 31

Freitag, 28. April 2017, 11.00 Uhr c.t.

im Raum W30 0-33/34 der Universität Oldenburg (NeSSy) und
Raum H28 / R 2.31 des Med. Campus Magdeburg (per Videoübertragung)

"Coding of low-rate frequency modulation"

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Dynamic changes in frequency are present in most natural sounds of the environment (speech and non-human vocalisations). These frequency modulations (FM) are of high information content, as they allow the characterization of different attributes of speech; for example the formants of consonants and diphthongs. They also carry important prosodic information in many languages. Many psychophysical studies have investigated the detection of sinusoidal frequency-modulation but the underlying mechanisms are still unclear. On one side, some researchers have put forth an 'excitation-pattern model' for FM detection, implying a common encoding mechanism for both amplitude (AM) and frequency modulations. This view has been challenged by a number of studies showing that changes over time in the pattern of neural phase-locking to temporal-fine-structure cues may be used to perceive FM, at least for low rates and carrier frequencies. Most physiological studies addressing the question of FM extraction and representation in the first site of the central auditory system predate the detailed physiological and morphological classifications of the cochlear nucleus neurons. In this study, responses from single ventral cochlear nucleus units of normal-hearing anaesthetized pigmented guinea pigs were recorded extracellularly in response to sinusoidal FM tones presented at various modulation depths and sound levels. The results from different populations of units will be discussed and compared with AM processing in the VCN.