



EINLADUNG

zum Vortrag im Rahmen des Seminars des SFB/TRR 31

Freitag, 8. May 2015, 11.00 Uhr c.t.

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

"Stimulus-specific adaptation in the auditory midbrain"

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The ability to detect deviations on the ongoing stimulation is important for survival and it requires of neural mechanisms to code for regularities and to signal the occurrence of specific stimuli not based on their physical identity but on their context of presentation. Neurons that exhibit stimulus-specific adaptation (SSA) may be involved in these computational tasks. SSA is a form of neural habituation whereby neurons adapt to frequently occurring stimuli but retain their sensitivity to rare ones. We studied the anatomical and physiological correlates of SSA exhibited by single neurons in the inferior colliculus. Our results suggest that the inferior colliculus is the first auditory stage where SSA emerges, and that SSA neurons are allocated in specific synaptic domains receiving an unbalanced set of top-down versus bottom-up inputs. Finally, we demonstrated through iontophoretic experiments that inhibitory and cholinergic inputs differently affect the response to common and rare sounds. Our data indicate that IC neurons are able to filter redundant spectral information and that their SSA responses are dynamically modulated by corticofugal projections and by neuroactive substances.

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