



Sonderforschungsbereich/Transregio 31 "Das aktive Gehör"

EINLADUNG

zum Vortrag im Rahmen des Seminars des SFB/TRR 31

Freitag, 19. November 2010, 14 Uhr c.t.

im Raum W2 1-143 der Universität Oldenburg und
Medical Campus, Magdeburg, H28 / R 2.31 (Video Conference Room)
(per Videoübertragung)

"Shaping functional architecture by oscillatory alpha activity: gating by inhibition"

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In order to understand the working brain as a network, it is essential to identify the mechanisms by which information is gated between regions. We here propose that information is gated by inhibiting task-irrelevant regions, thus routing information to task-relevant regions. The functional inhibition is reflected in oscillatory activity in the alpha band (8-13 Hz). From a physiological perspective the alpha activity provides pulsed inhibition reducing the processing capabilities of a given area. Active processing in the engaged areas is reflected by neuronal synchronization in the gamma band (30-100 Hz) accompanied by an alpha band decrease. According to this framework the brain should be studied as a network by investigating cross-frequency interactions between gamma and alpha activity. Specifically the framework predicts that optimal task performance will correlate with alpha activity in task-irrelevant areas. Given that alpha activity is by far the strongest signal recorded by EEG and MEG, we propose that a major part of the electrophysiological activity detected from the working brain reflects gating by inhibition.