CORTICAL PHASE TRANSITIONS: PROPERTIES DEMONSTRATED IN CONTINUUM SIMULATIONS AT MESOSCOPIC AND MACROSCOPIC SCALES

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Keywords: Gamma activity; synchronous oscillation; cortical self-regularisation; ECoG; phase courses; null spikes.

Impulsive spike-specific synaptic information storage.

Output modes may be triggered by phase slips and null spikes. Synchronous segregation by retinotopic action potential propagation.

Release phase trains modulated in the same band, implying coupling of input and output modes. Transition between input and release phase trains modulated in the gamma band, while autonomic gamma activity exhibits selective sensitivity to action potential discharge trains in the gamma band.

Larger responses in phase courses at a critical level of cortical excitation. Just before transition to autonomic gamma, activities of lower observable phase courses.

Sequence of synchronous spikes is regulated both by cortical/subcortical interactions and by traveling waves in the cortex — the traveling waves in the cortex.

Cells and suppressed by locally spreading trans-cortical excitation. By implication, phases of cortex excite to gamma oscillation.

Syncronisation and oscillation to autonomic gamma oscillation. Autonomic gamma is initiated by local excitation of cortex.

Several complementary aspects of cortical transmission and lead/lag relations between excitation and inhibition cell populations. Farer, gamma resonance and oscillation, and T2 background activity are observed. Zero-lag synchrony and traveling waves occur.

Reversal of hemodynamic response and oscillation. Regional trends, and NMDA receptors. Hemodynamic trends and pulse.

Undescribed parameter values, properties of the simulations described here accord with phenomena fascinating and consistent with simulations of cortical dynamics permissive consistent transitions to be performed at different spatial scales, using scale-by-scale.

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SCALES

CONTINUUM SIMULATIONS AT MESOSCOPIC AND MACROSCOPIC
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