

# Phase-Locking Induced by Transcranial Alternating Current Stimulation in a Balanced Network of Adaptive Exponential Integrate-and-Fire Neurons

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Spike timing is a critical feature of neural computation, enabling synchronization and communication within brain circuits. Transcranial alternating current stimulation (tACS), a noninvasive technique, has emerged as a promising tool for modulating neural activity by influencing spike timing. However, its mechanisms and effects at both the population and single-neuron levels remain incompletely understood. This study investigates phase-locking phenomena in a computational model of a balanced excitatory-inhibitory network of adaptive exponential integrate-and-fire (AdEx) neurons subjected to tACS-like external AC stimulation.

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