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“Neural and environmental rhythms: Perception is shaped by synchronization of neural oscillations with environmental rhythms”

The human ability to continuously track dynamic environmental stimuli, for example speech and music, is proposed to profit from ñentrainmentò of neural oscillations (i.e., neural oscillations become synchronized with environmental rhythms). I will present electroencephalography (EEG) data demonstrating that entrainment of neural oscillations by simple rhythms and by complex, naturalistic rhythms enhances auditory perception. Moreover, in the absence of rhythm, nonentrained neural oscillations create complex dynamical states that enhance perception, suggesting that rhythms in the environment might simplify neural dynamics. I will also present future work focusing on characterizing the neural oscillators that produce neural oscillatory activity and how they might change with development and disorder.