
Neural oscillations for cognitive control

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Abstract

How do cognitive agents implement cognitive control? Computationally, (reinforcement) learning has turned out to be a very useful framework for cognitive control (Silvetti et al., 2018, PLoS Comp Bio). Empirically, neural oscillations measured at a fast ($> 10\text{Hz}$) time scale have been ubiquitously recorded while animals and humans alike implement cognitive tasks (Fries, 2015, Neuron). I will present recent work that combines these two approaches. Specifically, I describe a computational model that implements cognitive control via neural oscillations; the model learns which oscillations to use at what time. We tested empirical predictions from the model; these will also be reported.

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