

Saints Pères Neuroscience Seminar Series

Friday, June 7th, 2019 at 11:30

Salle des Conférences (R229)

Centre Universitaire des Saints-Pères

45 rue des Saints-Pères, 75006 Paris

Brent Doiron

Professor

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The circuit mechanics of neuronal variability

Neuronal responses are notoriously variable, with sizable trial-to-trial and dynamics fluctuations in spiking activity that are shared across large populations of neurons. Furthermore, the degree and population structure of this variability is malleable, depending on host of stimulus and cognitive factors. I will present modelling and theoretical work that uncovers how spatially extended cortical circuits with large excitation that is balanced by an opposing inhibition can capture low dimensional shared variability reported in many population recording studies. The spiking variability in our model is also easily quenched through a top-down signal to inhibitory neurons, matching experimental results in spatial attention discrimination task. Finally, we explore how our circuit based manipulation of neuronal variability affects information flow as it propagates across cortical areas.

Those interested in meeting with the speaker please contact

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