

Title: Using models and machine learning to complement experimental studies of sleep physiology

Abstract:

Experimental studies have provided invaluable insights for deepening our understanding of the neural mechanisms and functions of sleep. However, limitations inevitably exist in what can be experimentally measured. Computational models and methods based on machine learning can partially address this limitation by permitting to estimate variables that would otherwise be unmeasurable. In my talk I will present some studies based on using computational approaches to estimate how sleep modulates the strength of synaptic connections between neurons, and what this means for understanding the role of sleep in memory consolidation and other cognitive functions.