



Sensory Processes: From Molecules to Cognition

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Session 3 Neuronal Oscillations and Cellular Communication

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Intrinsic Coupling Modes and Cognition

Intrinsic coupling constitutes a key feature of ongoing brain activity, which exhibits rich spatiotemporal patterning and contains information that influences cognitive processing.

I will discuss evidence for two distinct types of intrinsic coupling modes which seem to reflect the operation of different coupling mechanisms. One type arises from phase coupling of band-limited oscillatory signals, whereas the other results from coupled aperiodic fluctuations of signal envelopes. The two coupling modes differ in their dynamics, their origins, their putative functions and with respect to their alteration in neuropsychiatric disorders.

I will propose that the concept of intrinsic coupling modes can provide a framework for capturing the dynamics of intrinsically generated neuronal interactions at multiple spatial and temporal scales.

