

The Spontaneous Brain: Mapping the Intrinsic Foundations of Behaviour and its Dynamic Changes.

Thursday, September 11, 2025 2:30 PM (1 hour)

When the brain lies at rest, in the absence of external input or tasks, spontaneous (intrinsic) brain connectivity is thought to represent a prior of relevant stimuli or behaviours. How does it apply to the hand, e.g., the main means of interaction with the external environment? Large patches of the cerebral cortex are dedicated to representing the human hand; these regions exhibit patterns of structured spatiotemporal correlation even at rest. Building on previous neuroimaging studies showing alignment between spontaneously emerging patterns and those evoked by natural stimuli, then the challenge is to understand if an internal model of frequent hand movements and stimuli is encoded in the resting brain. Understanding the existence of intrinsic foundations of behaviour offers the opportunity to explore its resilience to change. These issues open the way to exploring the stability and flexibility of functional brain architecture, behavior, and cognition in response to extreme manipulation of the body. These findings apply to the development of next-generation prostheses designed not static replicas of the body, but adaptive extensions of the self, in resonance with cognitive, motor, affective, and cultural dimensions.

If you're submitting a symposium talk, what's the symposium title?

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?

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Session Classification: Keynote 1: Viviana Betti