THE WHOLE-BRAIN DYNAMICS UNDERLYING DIFFERENT BRAIN STATES

A TALK BY
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A given brain state could be defined by the broadness of communication, i.e. the dynamical complexity of the underlying network activity sustained by a static structural anatomical connectome. Here, we review whole-brain dynamics and computational modeling aiming to address this important problem. We propose that combining this powerful new data-driven framework with a causal whole-brain

computational model can provide novel insights into underlying mechanisms of different brain states. Further more, we will discuss how to use the present framework for not only describing healthy brain states but also its breakdowns in disease.

Gustavo Deco: iis Research Professor at the Institució Catalana de Recerca i Estudis Avançats (ICREA) and Professor (Catedrático)   at the Pompeu Fabra University (UPF) where   he leads the Computational Neuroscience group. He is also Director of the Center of Brain and Cognition (UPF).
The main aim of his research is to elucidate precisely the computational principles underlying higher brain functions and their breakdown in brain diseases. This line of research allows to comprehend the mechanisms underlying brain functions by complementing structural and activation based analyses with dynamics.

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