

**SESIONES CIENTIFICAS DEL CTB
VIERNES 20 DE MARZO DE 2014**

PONENTE: Dr. Jordi García Ojalvo
Universidad Pompeu Fabra, Barcelona

TÍTULO: Coordination of collective neural dynamics

Oscillations are a pervasive property of neuronal populations, even though individual neurons *in vivo* usually fire in an irregular and sparse manner. In this talk I will discuss how this emerging collective dynamics is coordinated at the mesoscopic level. To that end, we study how synchronization emerges between two neuronal populations, represented by random networks of conductance-based neurons. We consider the conditions under which phase coherence arises between the two populations, even in the presence of delay in the coupling, and study how this coherence enables communication. We will also examine the effect of background synaptic noise, as controlled by the excitability of the tissue, on the regularity of the slow oscillations exhibited by cortical networks under conditions of slow-wave sleep and anaesthesia.