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Title: From bistability to complexity in the cortical network

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Slow oscillations dominate the activity of both the intact and the isolated cerebral cortex and present similar characteristics across different cortical areas. These properties led to the suggestion that slow oscillations are the default emergent activity of the cortical network^[1, 2]. Such default activity is a low complexity state that integrates neuronal membrane, synaptic activity and connectivity properties of the cortex. It provides a gauge of the state of the underlying network, being sensitive to variations of parameters such as ionic levels^[3], temperature^[4] or excitatory/inhibitory balance^[5]. It also serves the identification of pathological changes, having been used to characterize transgenic models of neurological diseases^[6, 7]. This cortical default activity pattern acts as a powerful attractor leading to a breakdown of cortical connectivity and complexity^[8]. Getting out of this attractor is necessary for the brain to recover the levels of functional connectivity^[9] and complexity associated with conscious states^[10].

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