Neural information processing: normal and pathological

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Abstract: A large class of neurological and psychiatric disorders could be characterized by patholoigcal neural information processing. Anxiety, autism, depression and schizophrenia belong to this class.
First, the concept of "neurological disorders as dynamacial diseases" are briefly reviewed. Second, a case study will be given to demonstrate how computational modeling offers a new mental strategy for drug discovery by integrating conventional electrochemical/biophysical and neurochemical models.
A characteristic electrical pattern, namely the slow rhytmic activity (called theta rhythm) plays an importan functional role in the hippocampus and related areas. Specifically, septo-hippocampal theta activity might have a controversial role: it is known to be strongly involved in enhancing cognitive functions, but might be correlated to anxiety. The 'optimal performance' of the system may be the result of a finely tuned control system.