

Computational modeling of epilepsy dynamics

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Abstract

Epileptic activity is characterized as the alternating state of neuronal activity. The nervous system from normal states is intermittently changed to oscillatory behavior characterized by synchronous activity. The underlying oscillatory and biological mechanism has been studied in a perspective of finding the best solution for epilepsy treatment. In order to understand brain mechanisms involved in the epileptic seizures onset, there are animal and computational modelling has been used. The goal of this work is to explore the phenomenon of multiple stable states in systems consisting a large amount of interconnected units. The phase synchrony (PSA) and principle component analysis (PCA) has been used to analyze the collective behavior of the system.

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