Synchronization In Chaotic Systems

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A general introduction to synchronization phenomena will be given. I start with historical indtroduction, then present the classical theory of synchronization of periodic oscillators. Then its extension to phase synchronization of chaotic system is described. I also describe complete synchronization in chaotic systems. More complex situations (lattices, ensembles, media) will be only briefly mentioned.

Transition to Complete Synchronization in STC

In studies of complete synchronization of STC two types of transition can be observed. We study them as nonequilibrium phase transitions, applying ideas of scaling. We show that one, mediated by the linear Lyapunov vector, is of "Bounded-KPZ"-type, while another one, mediated by finite-size instabilities, belongs to DP type.