Joint Condensed Matter

and

Center for Soft Matter and Biological Physics

Seminar

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"From disorder to self-organization: A cyclic predator-prey system and a system of frustrated coupled oscillators"

Monday, October 29, 2018

4:00pm – 5:00pm

304 Robeson Hall

Self-organization is the emergence of spontaneous order as a result of local interactions among the elements of a system. Systems far from equilibrium that are evolving toward their self-organized state show very interesting dynamic behaviors. We study the dynamic behavior of two systems: a cyclic predator-prey system with a complex spatiotemporal pattern, as well as a system of coupled oscillators with antagonistic coupling. In the predator-prey model, the response of the system to external perturbation is used as an approach to gain insights about its dynamic behavior. On the other hand, the breaking of time translation invariance was observed during the spontaneous relaxation of a system of coupled oscillators after a parameter quench in the absence of any stochastic fluctuation.