



Seminar Announcement

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Friday, December 4, 2015

Green Hall, Room 0120

1:30 PM

Localized Dynamics in Phase Oscillators with Generalized Coupling

Abstract: Networks of oscillatory units are abundant in nature and technology and in the weak coupling limit can be described by a phase model where the state of each oscillator is given by a single phase variable. In contrast to the sinusoidal coupling in the classical Kuramoto equations, we are interested in dynamical phenomena that arise through more general coupling. In particular, we study spatially localized patterns in terms of frequency synchronization of oscillators—known as weak chimeras. We sketch some existence results for chaotic weak chimeras and discuss how these solutions could be significant for applications.

Bio: Dr. Bick did his PhD work at the Max Planck Institute for Dynamics and Self-Organization in the Network Dynamics Group with Marc Timme and got his PhD in Mathematics in 2012. From 2013 through Dec 2014 he was a postdoctoral associate at Rice University, Houston, TX to work with Mike Field. In January he started a Marie Curie Fellowship on the project GECO-Dynamics of Coupled Phase oscillators with Generalized Coupling hosted by Peter Ashwin at the University of Exeter.