



T.C.
İSTANBUL TEKNİK ÜNİVERSİTESİ
FEN EDEBİYAT FAKÜLTESİ
FİZİK MÜHENDİSLİĞİ BÖLÜMÜ
MASLAK 34469 İSTANBUL

İTÜ Fizik Mühendisliği Bölümü Bölüm Seminerleri

Konuşmacı : Dr. Deniz Eroğlu (Kadir Has Üniversitesi)
Konuşma Başlığı : The Rich Dynamics of Janus Oscillator Networks

Konuşma Özeti

Recent research has led to the discovery of fundamental new phenomena in network synchronization, including chimera states, explosive synchronization, and asymmetry-induced synchronization. Each of these phenomena has thus far been observed only in systems designed to exhibit that one phenomenon, which raises the questions of whether they are mutually compatible and of what the required conditions really are. Here, we introduce a class of remarkably simple oscillator networks that concurrently exhibit all of these phenomena, thus ruling out previously assumed conditions. The dynamical units consist of pairs of non-identical phase oscillators whose interacting through Kuramoto-type coupling.

Referanslar:

Multifaceted Dynamics of Janus Oscillator Networks, 011017 Phys. Rev. X , 2019
Collective dynamics of random Janus oscillator networks. arXiv:1907.12065 (2019)

Kısa özgeçmiş

Deniz Eroğlu is an Assist. Prof at Kadir Has University. After graduating in physics (BA & MS) from Ege University in 2013, Eroğlu studied at Potsdam Institute for Climate Impact Research as a research associate in a project supported by Leibniz Association. He did his doctoral work in theoretical physics at Humboldt University Berlin and defended his thesis in January 2016 with summa cum laude. Following postdoctoral fellowships at Imperial College and Northwestern University. He joined Kadir Has University in February 2019.

Deniz Eroğlu's research interest is broad and multidisciplinary, encompassing nonlinear dynamics, network theory, complex systems and game theory. He started his career focusing on nonlinear dynamics and chaos applied to network science. These projects dealt with the collective behavior of coupled chaotic systems. In PhD time, he worked on time series analysis in climate systems to reveal hidden connections between monsoon regions. Identification of the long-term anti-correlation between monsoon activities in Northern and Southern parts of the globe brought him the best PhD thesis prize in Potsdam Institute for Climate Impact Research. Currently, he is involved in four major grants and working on several applications of interacting systems, including neural, climate and energy networks. His expertise lies at the intersection of dynamical systems and data analysis.

Yer İTÜ Fizik Mühendisliği Bölümü Seminer Salonu (FEB L1 Z__)
Zaman 15 Kasım 2019 Cuma
15.00 (14.45 Çay- Kahve İkram servisi)

Bölüm seminerleri ağ sayfasından ayrıca tüm bilgilere ulaşabilirsiniz:
<http://www.fizik.itu.edu.tr/tr/seminars.php>