SFB 767
Seminar

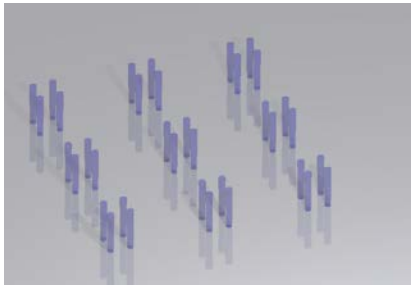
Universität Konstanz

Aug 2, 2018
13:30
P 602

MSc Karl Pelka

University of Malta

Robustness of synchronisation and emergent phenomena in optomechanical arrays



Synchronisation of weakly-coupled oscillators is a typical feature in non-linear dynamics known for centuries. Optomechanical arrays - networks of mechanical structures forced to oscillate by the radiation pressure force of photons - offer a convenient platform used to study synchronisation phenomena with possible technological applications.
Coupled oscillators are known to fail to synchronise completely but rather to support coexistence of coherence and incoherence - so-called chimera states -under specific conditions. Synchronisation was shown experimentally to exist in small arrays which raises the question of robustness and scalability of this effect.
We theoretically analyse the limits of robustness and find the emergence of chimera states along the borders of synchronisation.

Contact:
E. Weig, 3770

SFB 767