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“Control of chimera states in multilayer networks”

Chimera states are one of the most intriguing and studied types of partial synchronization. In small systems, which are the most relevant for experimental situations, chimera states present various instabilities. Therefore, it is natural to investigate methods to control them. We propose a control mechanism based on the idea of a pacemaker oscillator, which allows to control the position of a chimera state within a network and to prevent its collapse to the fully synchronous state. We show how this mechanism developed for ring networks of phase oscillators can be applied to multilayer networks with more complex node dynamics, such as FitzHugh-Nagumo oscillator. In particular, we show that it allows to remotely control a chimera state in one layer via a pacemaker in the other layer.

The Seminar will take place online via Zoom as part of the Oberseminar “Nonlinear Dynamics” organized by Bernold Fiedler (FU Berlin), Isabelle Schneider (FU Berlin), Eckehard Schöll (TU Berlin) and Matthias Wolfrum (WIAS).

**For information on how to access the event, please contact any of the above or:
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Tuesday, 24.11.20 · 15:15h

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