
Dynamics of multifrequency communities of coupled oscillators

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Abstract

We generalize the Kuramoto model of globally coupled oscillators to multifrequency communities. After discussing general derivation of the governing equations, we consider three setups: non-resonantly coupled communities, two subpopulations close to a resonance 2:1, and three resonantly coupled subpopulations. In all cases complex regimes of collective dynamics are observed.

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