

Coupling and Motion of Chimera States

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Chimera states are a recently new discovered dynamical phenomenon displaying a self-organized spatially intermittent pattern of regions with coherent and incoherent motions. They constitute a new paradigm of dynamical behavior that can serve as a prototype for various physical phenomena, e.g. coexistence of synchronous and asynchronous neural activity (so called 'bump' states) or turbulent-laminar flow patterns. In this talk we report an essential new feature of the chimera state: We point out that, on top of the chaotic motion within the incoherent region, the coherent and incoherent region themselves show a translation motion of their position on the unit circle. Moreover, the properties of this motion depends strongly on the type of coupling between oscillators [1].

[1] O. E. Omel'chenko et al. *Phys. Rev. E* **81**, (2010), p. 065201.