

Traveling wave state induced by correlated disorder

Hyunsuk Hong, Chonbuk National University

In this talk, I will talk about the collective properties shown in a model of coupled phase oscillators with correlated disorder. Each oscillator in the model has a site-dependent coupling parameter in addition to the natural frequency, where the coupling parameter plays a role as a disorder. According to the previous studies, when the disorder distribution is symmetric with zero mean, no coherence has been found to emerge, but if a sort of correlation comes into the system, the coherence can emerge. Moreover, the coherence is characterized as the traveling wave (TW) state, which is induced by the interplay between the natural frequency and coupling disorder. The mechanism of the TW state in this model will be discussed briefly.