[P8] Stochastic common input for synchronizing oscillators on active media

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Pulsatile hormones regulate a physiological state, which then reversely affects the hormone secretions. Inspired by the biological loop, we proposed a self-entraining oscillator model in which independent oscillators are globally coupled through an active media of which state is evolved by the phases of oscillators. Given sufficient energy pumping or dissipation, the active media can entrain oscillators to be perfectly synchronized. Interestingly, stochastic energy input to the media can shorten the time for reaching perfect synchronization. This simple setup may provide a useful platform for understanding dynamic equilibration of small systems.