Landau damping in the Kuramoto model

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Résumé

The Kuramoto model is a kinetic model of oscillators for studying synchronisation behaviours. Like the Vlasov-Poisson equation it has a stability mechanism through phase mixing in weak topologies, which is the Landau damping. Compared to the Vlasov-Poisson equation, the interaction in the Kuramoto model is simpler allowing more results. In particular, we can study the stability of spatially inhomogeneous states. In this talk, I will introduce (i) the Kuramoto model, (ii) the Landau damping and (iii) the stability of inhomogeneous states.

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