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## Scattering, random phase and wave turbulence

*Friday, May 24, 2024 11:15 AM (1 hour)*

The theory of wave turbulence aims at a description of the nonlinear interaction of a large number of waves. In this talk, I will present a family of initial data for the cubic two-dimensional nonlinear Schrödinger equation on the real plane, motivated by the link between regularity of the resonant manifold and dispersive properties of the equation and scattering phenomena. These initial data are periodic functions embedded in the whole space by Gaussian truncation and we are able to describe the time evolution in various time scales for deterministic and random initial data, in the limit of a large number of periods and small initial data. This allows explicit computations and we identify two different regimes where the time evolution converges towards the kinetic operator but with different forms of convergence, coming from resonances or quasis resonances. This is a joint work with Erwan Faou.

**Presenter:** MOUZARD, Antoine