

Contribution Title:                    RESONANT PERTURBATIONS OF HAMILTONIAN  
  SYSTEMS IN INFINITE DIMENSIONS

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Invited speaker:                      YRS

YRS seminar:                         NO

We develop a resonant perturbation theory for Hamiltonian PDE's, which include both the linear and nonlinear Schroedinger equations. In this lecture, we focus on the linear theory, where we prove eigenfunction localization (in the Fourier space) for the 2D periodic Schroedinger operator on the square torus, solving a basic problem in spectral theory. We will also give an indication of the construction of time quasi-periodic solutions for the nonlinear Schroedinger equations.