ABSTRACT

I will discuss the problem of studying the long-time behaviour of small solutions for nonlinear Hamiltonian PDEs on T^d. I will explain that the equations in question have abundance of small time-quasiperiodic solutions and that the behaviour of solutions for space-multidimensional equations (d>1) significantly differs from that for the 1d systems since in the 1d case the constructed solutions are linearly stable, while in the space-multidimensional case many of them are linearly unstable. Physicists call this phenomenon the « modulational instability ». The talk is based on my recent joint work with H.Eliasson and B.Grebert in GAFA 26 (2016), (arXiv 1604.01657)