

Recursive solutions in Hamiltonian PDEs

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Many physical phenomena of ondulatory nature are modelled by Hamiltonian PDEs. Of course the typical behaviour of solutions is strongly related to the boundary conditions and in these lectures we shall deal with (very simple) compact domains. In considering nonlinear PDEs one expects a complicated interplay between regular and chaotic behaviour. We shall deal with two fundamental questions:

1. Recursive solutions (periodic, quasi-periodic or almost-periodic in time)
2. Long time stability close to such solutions