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Guest lecture

RG Analysis of Partial Differential Equations

Christof Sparber
(University of Illinois at Chicago)

"Ground state (in-)stability and long-time behavior in multi-dimensional Schrödinger equations"

Abstract:

We consider Schrödinger equations with competing nonlinearities in spatial dimensions up to three, for which global existence holds (i.e., no finite-time blow-up). A typical example is the case of the (focusing-defocusing) cubic-quintic NLS. We recall the notions of energy minimizing versus action minimizing ground states and show that, in general, the two must be considered as nonequivalent. The question of long-time behavior of solutions, in particular the problem of ground-state (in-)stability will be discussed using analytical results and numerical simulations.

June 3, 2025
15:30

SR 2, ICT Building,
Technikerstraße 21a