Correlation Estimates and Applications to Schrodinger Equations

Manoussos Grillakis
University of Maryland, USA
mng@math.umd.edu

In the present talk I will outline various methods that can be employed in order to obtain correlation type estimates for Schrodinger equations. The idea originated in the work of Lin and Strauss in three space dimensions, but recent advances make it a general and powerfull tool. In two space dimensions one can obtain an apriori estimate which is the nonlinear analog of a bilinear estimate obtained by Bourgain. In higher space dimensions one can obtain global in time estimates for the density after the collapse of some internal variables. Finally I will explain how these estimates can be used in order to prove scattering for nonlinear Schrdinger equations.

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