

Contribution Title: DERIVATION OF EFFECTIVE EVOLUTION EQUATIONS FROM MANY BODY QUANTUM DYNAMICS

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Invited speaker: Topical session

YRS seminar: NO

In this talk, I am going to review recent results concerning the derivation of effective evolution equations from many body quantum mechanics. I am going to discuss different methods leading to rigorous derivation of the nonlinear Hartree equation for the time evolution of mean field systems, and to the time-dependent Gross-Pitaevskii equation for the evolution of Bose-Einstein condensates. This talk is based on joint works with L. Erdos, H.-T. Yau, A. Michelangeli, and I. Rodnianski.