

1129-35-141

XUWEN CHEN* (xuwenchen@rochester.edu), Department of Mathematics, University of Rochester, Rochester, NY 14627, and **Justin Holmer**, Department of Mathematics, Brown University, Providence, RI 02912. *The rigorous derivation of focusing NLS from quantum many-body evolutions.*

The rigorous justification of mean-field type equations (Boltzmann, Vlasov-Poisson, NLS...) from the many-body systems they are supposed to describe is a vast and fundamental subject. In this talk, we talk about recent advances in this area on the derivation of focusing nonlinear Schrodinger equations (NLS) from quantum many-body evolutions in the context of Bose-Einstein condensation, which has been one of the most active areas of contemporary research since the Nobel prize winning experiments. We survey the background and the evolution of the results and techniques in the field during the talk. (Received March 11, 2017)