



MICHAEL BISHOP 'Delocalization of the Ground State in Interacting Boson Systems'

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May 25, 2012

Seminar, May 25, 2012, 15:00. Seminar Room

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In systems of non-interacting quantum particles with random potentials, particles with low energy localize spatially because the disorder insulates the system; this localization of particles occurs in a wide class of disordered quantum systems. For interacting systems of bosons in the mean-field approximation, interaction causes low energy wave functions to distort and delocalize, in competition with the disorder. In this talk, I will present an argument the interaction forces the ground state wave function to delocalize in large

systems and occupy space proportional to the number of particles, even for large potential barriers. If there is time, I will also discuss results on the shape and energy of the ground state in these systems.

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Hosted by Prof. Maciej Lewenstein