

Center for Quantum Science and Engineering (CQSE)

Weekly Seminar
Nov. 26, 2010 (Friday)

TIME Nov. 26, 14:30 ~ 15:30
TITLE Quantum phase transitions in a two-species hard-core boson
Hubbard model in two dimensions
SPEAKER Dr. Po-Chung Chen 陳柏中博士
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PLACE Rm716, CCMS & New Physics Building, NTU

Abstract

We investigate various quantum phase transitions of attractive two-species bosons in a two-dimensional square lattice. Using the algorithm based on the tensor product states, the phase boundaries of the pair-superfluid states with nonzero pair-condensate density and vanishing atomic condensate density are determined. Various quantum phase transitions across the phase boundaries are characterized. Our work thus provides guides to the experimental search of the pair-superfluid phase in lattice boson systems.

