

Abstract Submitted
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Attractive Bose-Hubbard model with three-body constraint¹

KWAI-KONG NG, MING-FONG YANG, Tunghai University — We numerically study the quantum and thermal phase transitions of the Bose-Hubbard model with particle numbers per site restricted to less than three. The bosons experience on-site attractions while the nearest-neighbor interactions are repulsive. Using particular two-loops algorithm in the QMC simulations, we study the exotic dimer superfluid at small hopping and low density regime. The nature of the phase transitions between the dimer superfluid and the atomic superfluid will be discussed.

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Kwai-Kong Ng
Tunghai University

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