

Abstract Submitted
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Variational Monte Carlo study of pairing symmetries of Na_{0.3}CoO₂·1.3H₂O¹ RUI FAN, YONG-QIANG WANG, HAI-QING LIN, Institute of Theoretical Physics and Physics Department, The Chinese University of Hong Kong, Hong Kong, China — To investigate possible pairing symmetries of Na_{0.3}CoO₂·1.3H₂O, we study the single band extended Hubbard model on triangular lattice with variational Monte Carlo method. For the on site s-wave, the extended s-wave, the d-wave, the f-wave and the extended-f wave pairings, we use the corresponding BCS type mean field wave functions with Jastrow factors as our trial wave functions. We found that in a suitable parameters region, the extended f-wave pairing is stabilized by the nearest-neighbor Coulomb interaction V . In order to further investigate the true ground state of this system we use the constrained path Monte Carlo (CPMC) method to calculate different correlation function in the ground state.

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