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Many-Variable Variational Monte Carlo Study of Triangular Hubbard Model RYUI KANEKO, SATOSHI MORITA, MASATOSHI IMADA, Department of Applied Physics, University of Tokyo — Motivated by the previous numerical studies on the triangular Hubbard model, we study low-energy states of the model at half filling up to 144 sites by using the many-variable variational Monte Carlo method. We consider the variational wave functions with the fermionic singlet-pairing wave functions, with the Gutzwiller-Jastrow factor, and the quantum-number projection to the total spin singlet. We reproduce the metallic state for the small Coulomb interaction, and the antiferromagnetic insulating state with 120° spin structure for the large Coulomb interaction. We discuss the energetic and magnetic properties of the intermediate Coulomb interaction region.

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