

Abstract Submitted
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Mott transition and ferrimagnetism in the Hubbard model on the anisotropic kagome lattice ATSUSHI YAMADA, KAZUHIKO SEKI, Department of Physics, Chiba University, ROBERT EDER, Karlsruhe Institute of Technology, YUKINORI OHTA, Department of Physics, Chiba University — Mott transition and ferrimagnetism are studied in the Hubbard model on the anisotropic kagome lattice using the variational cluster approximation and the phase diagram at zero temperature and half-filling is analyzed. The ferrimagnetic phase rapidly grows as the geometric frustration is relaxed, and the Mott insulator phase disappears in moderately frustrated region, showing that the ferrimagnetic fluctuations stemming from the relaxation of the geometric frustration is enhanced by the electron correlations. In metallic phase, heavy fermion behavior is observed and mass enhancement factor is computed. Enhancement of effective spatial anisotropy by the electron correlations is also confirmed in moderately frustrated region, and its effect on heavy fermion behavior is examined.

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