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Magnetic Fluctuations in the Hubbard Model on Kagome-based Frustrated Lattices MASAFUMI UDAGAWA, YUKITOSHI MOTOME, Department of Applied Physics, University of Tokyo — We report our results on the interplay between electron correlation and magnetic fluctuations in the geometrically-frustrated Kagome and hyper-Kagome Hubbard models at half filling. These models have two different geometrical units important in the low-energy physics: the frustrated triangle and the non-frustrated loop with even-number sites. In order to treat both of them on equal footing, we apply cluster dynamical mean-field theory to large-size clusters up to 12 sites. By calculating the spin susceptibility $\chi(\vec{q},\omega)$, we have found in the Kagome system that an anomalous one-dimensional magnetic correlation previously found near the Mott transition [1] is observed even in the non-interacting case at high temperature, and its temperature range gradually suppressed by increasing electron correlation. This behavior is ascribed to the nesting property at the van-Hove singularity preserved under electron correlation. We will also present the results for hyper-Kagome system in relation to the recent experiments on $Na_4Ir_3O_8$ [2].
[1] T. Ohashi *et al.*, Phys. Rev. Lett. **97**, 066401 (2006)
[2] Y. Okamoto *et al.*, Phys. Rev. Lett. **99**, 137207 (2007)

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