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Electron correlation effect on temperature and magnetic-field dependences of thermopower[1] MARI MATSUO, Japan Atomic Energy Agency and JST-CREST, SATOSHI OKAMOTO, Oak Ridge National Laboratory, WATARU KOSHIBAE, RIKEN, Japan, MICHIYASU MORI, SADAMICHI MAEKAWA, Japan Atomic Energy Agency and JST-CREST — We theoretically investigate the temperature T and the magnetic field dependences of thermopower. To focus on the strong electron correlation, the Hubbard model is solved in the dynamical mean field theory with the non-crossing approximation impurity solver. The thermopower shows a non-monotonic behavior as a function of T and asymptotes to the high-T values given by the Heikes formula, depending on the ratio of Coulomb repulsion and T. The large response to the magnetic-field, which is observed in the cobalt oxides [1], can be associated with the sharp quasiparticle peak intrinsic to the strongly correlated electron system. We discuss the effect of orbital degeneracy, which is another key factor to enhance the thermopower in the correlated system [2].

[1] Y. Wang *et al.*, Nature **423**, 425 (2003).
[2] W. Koshibae *et al.*, Phys. Rev. B **62**, 6869 (2000).

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