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Magnetic fluctuations of filled skutterudites emerging in the transition region between singlet and triplet states TAKASHI HOTTA, Advanced Science Research Center, Japan Atomic Energy Research Institute — In order to clarify magnetic properties of filled skutterudites, we investigate the Anderson model including seven f orbitals hybridized with $a_{\rm u}$ conduction band. By using the numerical renormalization group method, we evaluate magnetic susceptibility and entropy of f electron for n=1$\sim$13, where n is local f-electron number. Then, we find that f-electron states are clearly distinguished as itinerant Γ_7 and localized Γ_8 in the filled skutterudite structure. For n=2 corresponding to Pr-based filled skutterudites, even if the ground state is Γ_1 singlet, there remain significant magnetic fluctuations from $\Gamma_4^{(2)}$ triplet state with small excitation energy. We envision a scenario that unconventional superconductivity is induced by such magnetic fluctuations in a limited region in which singlet and triplet states are interchanged.

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