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# Electronic Structure and Superconductivity in CeMIn5 and PuCoGa5

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We discuss the electric structure of CeMIn5(M=Co,Rh,Ir) and PuCoGa5 and their superconducting mechanism on the basis of the periodic Anderson Hamiltonian. We derive the electronic structure by calculating the normal self-energy up to the third order terms and/or we use the Fluctuation exchange approximation. We can obtain the critical temperature Tc by solving Dyson-Gorkov equation. We can show that in these systems d-wave(dx2-y2) superconductivity is realized similarly to the cuprates. The difference of Tc among these three systems can be explained by the differece of quasi-particle band width, namely the renormalized Ferumi energy. This fact means that renormalization effect due to the electron correlation is essentially important to understand the quantative value of Tc. In each system, correrated electron filling for d or f electron is important to determine the electron mass. Thus we need to use the periodic Anderson Hamiltonian for the quantative discussion.

References
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