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'Unscreening' Effect on Fe-Pnictide Superconductor MASAO OGATA, Department of Physics, University of Tokyo and JST, TRIP, YUKI FUSEYA, TOSHIKAZE KARIYADO, Department of Physics, University of Tokyo
— We study a microscopic mechanism of Fe-pnictide superconductor, considering the screening effects of Coulomb interaction in addition to the conventional spin-fluctuation mechanism. It is shown that, by electron doping, the transition temperature of superconductivity increases due to the 'unscreening' effect even though the density of states decrease, while that of spin-density wave rapidly decreases due to breaking of nesting conditions. Our results give a clear interpretation to the mystery of interrelation between Tc and the density of states observed in the Fe-pnictide superconductors.

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