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Fe-doping-induced charge-orbital ordering in manganese oxides
HIDEAKI SAKAI, KIMINORI ITO, YOSHINORI TOKURA[1], Department of Applied Physics, University of Tokyo — We investigated Fe-doping effects on a ferromagnetic metallic crystal, $(La_{0.7}Pr_{0.3})_{0.65}Ca_{0.35}MnO_3$, which locates near the phase boundary to the charge-orbital ordered insulator. It was found that the competing charge-orbital ordering correlation is induced by substituting a small amount of Fe atoms for Mn ones. Such a tendency nicely contrasts with the impurity-induced ferromagnetic metallic phase appearing in the charge-orbital ordered manganites, for example, Cr-doped $Nd_{0.5}Ca_{0.5}MnO_3$ as intensively investigated for past years. Furthermore, we observed glassy magnetotransport properties as well as diffuse insulator-metal transition, such as magnetic- field annealing effects and long-time relaxation, like a "relaxor ferromagnet".

[1]Also AIST-CERC, ERATO-SSS and ERATO-MF

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