Fe-doping-induced charge-orbital ordering in manganese oxides
HIDEAKI SAKAI, KIMINORI ITO, YOSHINORI TOKURA\textsuperscript{1}, Department of Applied Physics, University of Tokyo — We investigated Fe-doping effects on a ferromagnetic metallic crystal, \((\text{La}_{0.7}\text{Pr}_{0.3})_{0.65}\text{Ca}_{0.35}\text{MnO}_3\), 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 \(\text{Nd}_{0.5}\text{Ca}_{0.5}\text{MnO}_3\) 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”.

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