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**Quantum Critical Behavior in Heavy-Fermion Iron Oxypnictide Ce($Ru_{1-x}Fe_x$)PO**[1]

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Quantum phase transition in itinerant ferromagnets is one of the major topics in a strongly correlated electron system, since it has been suggested to be always first order when the ferromagnetic (FM) order is suppressed by pressure or chemical doping [1]. In order to obtain universal features of the FM quantum criticality, we have studied the two-dimensional heavy-fermion (HF) system Ce($Ru_{1-x}Fe_x$)PO from microscopic $^{31}$P-NMR measurements [2-4]. A HF ferromagnet CeRuPO turns into a HF paramagnet by an isovalent Fe substitution for Ru. We found that Ce($Ru_{0.15}Fe_{0.85}$)PO shows critical fluctuations down to $\sim$ 0.3 K, as well as the continuous suppression of Curie temperature and the ordered moments by the Fe substitution. These experimental results suggest the presence of a FM quantum critical point (QCP) at around x = 0.86, which is a rare example among itinerant ferromagnets. In addition, we point out that the critical behaviors in Ce($Ru_{0.15}Fe_{0.85}$)PO share a similarity with those in $YbRh_2Si_2$ [5], where the local criticality of f electrons has been discussed [6]. We reveal that Ce($Ru_{1-x}Fe_x$)PO is a new system to study FM quantum criticality in HF compound.

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