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Impacts of Co-doping on the superconductivity and the orbital ordering state in $\text{Fe}_{1-x}\text{Co}_x\text{Se}$ single crystal studied by the electrical transport. TAKAHIRO URATA, YOICHI TANABE, Department of Physics, Graduate School of Science, Tohoku University, SATOSHI HEGURI, WPI-Advanced Institutes of Materials Research, Tohoku University, KATSUMI TANIGAKI, WPI-Advanced Institutes of Materials Research, Tohoku University and Department of Physics, Graduate School of Science, Tohoku University — In the FeSe with the simplest crystal structure in the Fe-based superconductor families, although both the superconductivity and the orbital ordering states are investigated, the relation between them is still unclear[1-4]. Here, we report Co doping effects on the superconductivity and the orbital ordering state in $\text{Fe}_{1-x}\text{Co}_x\text{Se}$ single crystals. The electrical transport measurements demonstrated that the superconductivity vanishes at 4% Co doping while the orbital ordering state may be robust against Co doping. Present results suggest that the orbital ordering state is not related to the emergence of the superconductivity in FeSe. [1] F. C. Hsu et al., Proc. Nat. Aca. Sci. 105, 14262 (2008). [2] K. Nakayama et al., arXiv:1404.0857v1 [3] T. Shimojima et al., Phys. Rev. B 90, 121111(R) (2014). [4] K. K. Huynh et al., Phys. Rev. B 90, 144516 (2014).

Takahiro Urata
Department of Physics, Graduate School of Science, Tohoku University

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