

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

**Non-Fermi liquid transport phenomena in SrIrO₃ thin films:
Role of disorder in a nematic phase** KYOUNG-MIN KIM, KI-SEOK KIM,
POSTECH — Recently, non-Fermi liquid transport phenomena have been found in SrIrO₃ thin films on various substrates: Increasing the lattice mismatch between SrIrO₃ thin films and substrates, the exponent α of electrical resistivity $\Delta\rho \sim T^\alpha$ shows the variation from $\alpha = 4/5$, $\alpha = 1$, to $\alpha = 3/2$. Such experiments confirmed that these thin films lie away from a magnetic quantum critical point. On the other hand, we suggest that the presence of strong spin orbit coupling may give rise to an electron nematic phase. As a result of combined effects between quantum criticality of electron nematicity and nonmagnetic quenched disorders, we suspect that the continuous evolution of the power-law exponent may be involved with quantum Griffiths effects. Performing the renormalization group analysis, we discuss a possible origin of this non-Fermi liquid physics.

Kyoung-Min Kim
POSTECH

Date submitted: 07 Nov 2016

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