

Abstract Submitted  
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**Resistance noise in the bad metal SrRuO<sub>3</sub>**<sup>1</sup> FRANCOISE KIDWINGIRA, MICHAEL ROZLER, GERTJAN KOSTER, WOLTER SIEMONS, RIK GROENEN, MALCOLM BEASLEY, Geballe Laboratory for Advanced Materials, Stanford University — SrRuO<sub>3</sub> (SRO) is a strongly correlated electrons system with some interesting properties. It is an itinerant ferromagnet below 150K and it transitions from a bad metal at high temperature to a Fermi Liquid at low temperature. In SRO thin films, there is evidence that even a slight presence of Ru deficiencies increases the degree of electron correlations [1]. Using Scanning Tunneling Potentiometry [2], we have studied the local transport properties of this material. The measured resistance has a noise level well above Johnson noise that depends both on the method of synthesis and on the voltage across the sample. We will attempt to characterize these resistance fluctuations with respect to the various unusual properties of the material. [1] W. Siemons *et. al.*, Phys. Rev. B **76**, 075126 (2007) [2] M. Rozler and M. R. Beasley, Rev. Sci. Inst **79**, 073904 (2008)

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