

Abstract Submitted
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Transport Measurements at the metal-insulator transition in pure NiS₂ ARNAB BANEREE, University of Chicago, YEJUN FENG, Argonne National Laboratory, DANIEL SILEVICH, University of Chicago, RAFAEL JARAMILLO, Harvard University, THOMAS ROSENBAUM, The University of Chicago — Ni(S,Se)₂ is a one of the few Mott-Hubbard systems where a structural phase transition does not preclude quantitative study of the localization of charge at the $T = 0$ metal-insulator transition. By application of hydrostatic pressures at milli-Kelvin temperatures using diamond anvil cell techniques, we study the corresponding behavior of pure NiS₂ at its quantum critical point. Comparison between pure and doped NiS₂ of the closing of the transport gap in the insulator and the power law temperature dependence of the conductivity in the metal should reveal the role of disorder at this quantum phase transition.

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