

Abstract Submitted  
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**Universal conductance fluctuations imply excess high frequency noise in mesoscopic gold wires.** A. TRIONFI<sup>1</sup>, S. LEE, D. NATELSON, Rice University Dept. of Physics and Astronomy — In cold, mesoscopic conductors, two-level fluctuators lead to time-dependent conductance fluctuations manifested as  $1/f$  noise that are enhanced by quantum interference up to a universal limit (TDUCF). In Au nanowires, we measure the magnetic field dependence of TDUCF, weak localization (WL), and magnetic field-driven (MF) UCF before and after treatments that alter magnetic scattering and passivate surface fluctuators. Our coherence length data resolve a long-standing inconsistency between  $L_{WL}$  and  $L_{TDUCF}$ , and may imply that fluctuators produce high frequency noise in excess of  $1/f$  expectations.

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