

Abstract Submitted
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Shot Noise Measurements in Individual Electromigrated Nanoscale Junctions PATRICK WHEELER, DOUGLAS NATELSON, Department of Physics and Astronomy Rice University — Shot noise provides insight into the correlated motion of electrons in nanostructures. Previous measurements have examined shot noise in mechanically controlled break junctions (MCBJs), looking at a large ensemble of junction configurations. Electromigrated, lithographically created Au structures at liquid nitrogen and helium temperatures allow for the shot noise measurement of individual junction configurations. High frequency excess noise is amplified by a rf amplifier chain and measured in combination with lock-in techniques simultaneously with the dc conductance. Preliminary noise measurements across bias and temperature are compared to previous experiments performed with MCBJs at room temperature, with an emphasis on the dependence of the noise on bias conditions.

Patrick Wheeler
Rice University

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