

Abstract Submitted
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Shot noise measurements in mesoscopic N-S-N structures¹

MARTIN STEHNO, D.J. VAN HARLINGEN, University of Illinois at Urbana-Champaign — Nonlocal subgap transport in mesoscopic superconductor-hybrid devices has received attention as a possible route towards creating and detecting entangled electron pairs in solid state devices. We study local and nonlocal transport in multi-terminal Cu/Al structures with transparent interfaces and separation between contacts comparable to the coherence length in the superconductor. The current shot noise in the two branches of the device is measured simultaneously and compared to the shot noise in a single contact. We discuss cross-correlations expected from Crossed Andreev Reflection and Elastic Co-tunneling processes, non-equilibrium transport in the superconductor, and device heating.

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