

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Nonlocal transport in multi-terminal NS structures with transparent interfaces¹ MARTIN STEHNO, DALE J. VAN HARLINGEN, University of Illinois at Urbana-Champaign — Several explanations have been proposed to describe nonlocal transport measurements in multi-terminal normal metal-superconductor structures. While Crossed-Andreev Reflection (CAR) and Elastic Co-tunneling (EC) processes are expected to dominate in structures with low-transparency contacts, proximity effects and non-equilibrium transport effects must be taken into account in systems with opaque interfaces. We fabricated and characterized Cu-Al structures with low resistance contacts and found rich structure in their nonlocal transport behavior. We will discuss the role of non-equilibrium effects and proximity coupling in NS systems and their relevance to experiments in FS (ferromagnet-superconductor) hybrid devices. We will also report on experiments to measure current noise in these devices.

¹Work supported by the National Science Foundation grant DMR 06-05813

Martin Stehno
University of Illinois at Urbana-Champaign

Date submitted: 19 Nov 2009

Electronic form version 1.4