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Symmetry of Charge and Thermal Transport in Andreev Interferometers JEFF WEISS, PHILIPPE JACQUOD, University of Arizona — Motivated by recent experiments of Chandrasekhar et al. [Phys. Rev. Lett. 81, 437 (1998); Phys. Rev. B 72, 020502(R) (2005)], we investigate the symmetry of charge and thermal transport through magnetic-field threaded Andreev interferometers. We construct a scattering theory that accounts for multi-terminal geometries with no specific spatial symmetry. We use random matrix theory to calculate both the electrical and thermal four-terminal resistances and the thermopower, focusing on their magnetic flux dependence. Our results on the parity and amplitude of the magnetic field dependence is connected to the experimental results.

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