

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Prediction for spin Fano factor generated by biased quantum spin chains¹ JOSHUA AFTERGOOD, SO TAKEI, City University of New York Queens College — We theoretically study noise in the spin current injected into a normal metal from a 1D Heisenberg spin-1/2 antiferromagnet. We consider the noise generated in two separate scenarios: first by inducing an over-population of one chiral mode relative to the other in the spin chain at uniform temperature, and second by elevating the temperature of the spin chain relative to the metal, i.e., by way of the spin Seebeck effect. We compute excess noise in the normal metal generated by the coupling to the spin chain and predict the spin Fano factor, defined as the noise in the spin current normalized by the average spin current, for both scenarios.

¹The authors thank the PSC-CUNY Research Award Program for its support.

Joshua Aftergood
City University of New York Queens College

Date submitted: 09 Nov 2016

Electronic form version 1.4