

Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Calculation of Magnetoresistance of an Ideal Topological Insulator Using Boltzmann Transport¹ TEOMAN OZTURK, Randall Laboratory of Physics, University of Michigan and Selcuk University, RICHARD FIELD III, YUN SUK EO, STEVEN WOLGAST, KAI SUN, CAGLIYAN KURDAK, Randall Laboratory of Physics, University of Michigan — The electrical conductivity of a topological surface state is expected to be enhanced due to the suppression of backscattering resulting from spin-momentum locking. We will present numerical calculation of this enhancement factor using Boltzmann transport for an ideal topological insulator with a single Dirac cone in an arbitrary magnetic field and discuss the manifestations of this for a Corbino sample placed in a tilted magnetic field.

¹This project was funded by NSF grant #DMR-1006500.

Teoman Ozturk
Randall Laboratory of Physics, University of Michigan

Date submitted: 15 Nov 2013

Electronic form version 1.4