

Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Angular Magnetoresistance Oscillations in Organic Conductors¹

HEON-ICK HA, Present address: Dept. of Physics, Harvard University, ANDREI LEBED, Dept. of Physics, University of Arizona, MICHAEL NAUGHTON, Dept. of Physics, Boston College — We demonstrate that electron wave functions change their dimensionality at some commensurate directions of a magnetic field (related to the so-called Magic Angles) in conductors with open [quasi-one-dimensional (Q1D)] sheets of Fermi surface. These 1D \rightarrow 2D dimensional crossovers lead to delocalization of wave functions and are responsible for angular magnetoresistance oscillations. As an example, we show that suggested theory is in excellent qualitative and quantitative agreements with the very recent experimental data obtained on (TMTSF)₂ClO₄ conductor by Heon-Ick Ha and Michael Naughton.

¹Supported by NSF DMR-0308973

Andrei Lebed
Dept. of Physics, University of Arizona

Date submitted: 03 Dec 2004

Electronic form version 1.4