

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Interlayer Magnetoresistance of the Layered Organic Conductor (DMET)₂I₃ P. DHAKAL, J.I. OH, Boston College, Chestnut Hill, MA 02467, USA, H. YOSHINO, Osaka City University, Osaka 558-8585, Japan, K. KIKCHUI, Tokyo Metropolitan University, Tokyo 192-0397, Japan, M.J. NAUGHTON, Boston College, Chestnut Hill, MA 02467, USA — The interlayer magnetoresistance $\rho_{zz}(\theta, \phi)$ of the layered organic conductor (DMET)₂I₃ is reported for all possible orientations in a 9T magnetic field at 100 mK, and compared with existing theoretical models. We have also calculated $\rho_{zz}(\theta, \phi)$ for such Q1D conductors using semiclassical calculations employing, for the first time¹, the true triclinic crystal structure. These calculations are in qualitative agreement with our data, especially in the $y-z$ plane, where all previous models fail to reproduce the experimentally observed² Lebed magic angle effect³. These results will be useful to understand the relationship between the different kinds of angular effects in this and other families of layered organic conductors. This work was supported by NSF Grant No. DMR 0605339. [1]. H. Yoshino, *et al.*, (unpublished). [2]. S. Uji, *et al.*, Proceeding of Physical Phenomena at High Magnetic Fields III (World Scientific, London, 1998), p 227. [3]. A. G. Lebed, JETP Lett. **43**, 174 (1986); T. Osada, *et al.*, Phys. Rev. Lett. **66**, 1525 (1991); M. J. Naughton, *et al.*, Phys. Rev. Lett. **67**, 3712 (1991).

P. Dhakal
Boston College, Chestnut Hill, MA 02467, USA

Date submitted: 22 Nov 2008

Electronic form version 1.4