Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Metal-insulator transition in pyrochlore Eu2Ir2O7 studied by infrared spectroscopy[1] ANDREI SUSHKOV, DENNIS DREW, CNAM and MRSEC, Department of Physics, University of Maryland, USA, JUN ISHIKAWA, SATORU NAKATSUJI, Institute for Solid State Physics, University of Tokyo, Japan, XUAN LUO, POSTECH, Korea, SANG-WOOK CHEONG, RCEM, Rutgers University, USA — The large family of pyrochlores with formula $A_2B_2C_7$ attracted a lot of early attention due to strong geometric magnetic frustration. Recent band structure calculations predict that the iridate pyrochlores $A_2Ir_2O_7$ may have nontrivial topological states. We will report the results of an infrared spectroscopic study of the metal-insulator transition in $Eu_2Ir_2O_7$ single crystal and $Y_2Ir_2O_7$ polycrystal. We will report the broad band IR reflection as a function of temperature for an overview of the M-I transition and the low frequency transmission which is more sensitive for detection of a 10 meV gap[1] and other possible excitations. We will discuss possible implications of the semimetal Weyl states. [1] J.J. Ishikawa et al., Phys. Rev. B 85, 245109 (2012).

[1]Work supported in part by NSF-MRSEC grant DMR-0520471

Andrei Sushkov
CNAM and MRSEC, Department of Physics, University of Maryland, USA

Date submitted: 09 Nov 2012 Electronic form version 1.4