

Abstract Submitted  
for the 4CF06 Meeting of  
The American Physical Society

**Electrical resistivity measurements of the chalcogenide spinel,  $\text{CuIr}_2\text{S}_4$ , under extreme conditions** MARK HANNI, Colorado State University, SEBASTIAN BUCKERT COLLABORATION, OLIVER MERK COLLABORATION, ROBERT ADAME COLLABORATION, HANS D. HOCHHEIMER COLLABORATION — Electrical resistivity as a function of pressure will be investigated for the thiospinel compound,  $\text{CuIr}_2\text{S}_4$ , which exhibits a metal to insulator transition at high pressures. This study will corroborate existing experimental and theoretical work and is the first of its kind to perform high pressure electrical conductivity and insulating phase optical studies in the range of room temperature to liquid nitrogen temperature. In addition, the transport properties of adamantine semiconductors will be studied at high pressure. The resistivity measurements will be made using a pseudo four-wire probing technique, using an AC constant current source, to eliminate thermal noise in the connections, and a nanovoltmeter. The study is currently ongoing and results are still pending. Improvements made to a stepper motor control program and changes to the system used for optical studies will be presented.

Mark Hanni  
Colorado State University

Date submitted: 06 Sep 2006

Electronic form version 1.4