ACCELERATOR SEMINAR

"Interlayer Magnetoresistance Oscillations in the Q1D Molecular Organic Conductor"

Pashupati Dhakal

The quasi one dimensional (Q1D) molecular organic conductors / superconductors are one of the most exciting materials to study almost all the ground states in condensed matter physics. These organic conductors are highly anisotropic so that they show oscillatory phenomena in conductivity for magnetic field rotated in different crystalline planes. Several kinds of angular magnetoresistance oscillations (AMRO) have been observed but the underlying physics is still mysterious in condensed matter physics.

In this talk, I will report the interlayer magnetoresistance $\rho_{zz}(\theta,\phi)$ of the layered Q1D organic conductor $(DMET)_2I_3$ for all possible orientations in a 9T magnetic field at 100 mK, and compared with existing theoretical models. Also, the calculated $\rho_{zz}(\theta,\phi)$ for such Q1D conductors, using semiclassical calculations employing, for the first time, the true triclinic crystal structure will be reported. These calculations are in qualitative agreement with our data, especially in the *y-z* plane, where all previous models fail to reproduce the experimentally observed Lebed magic angle effect.

Tuesday, June 8, 2010
11:00 a.m. – 12:00 p.m.
CEBAF Center, Room A110

Coffee before seminar begins at 10:45 a.m.

Jefferson Lab

For further info, please contact Anne-Marie Valente at x6073 or Alex Bogacz at x5784