Weekly Seminar

Novel Magnetism in Some Iridate Compounds

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Time: 10:00am, June. 13. 2014 (Friday)

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Venue: Room 607, Conference Room A , Science Building 5

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Abstract

5d transition-metal-oxide compounds (e.g. iridates) have recently attracted growing interest because of their potential for realizing new topological phases, such as topological Mott insulators and Weyl semimetals, which can possibly arise from the interplay of strong spin-orbit coupling and electron correlation. In order to realize these topological states, it is essential to understand the magnetic properties as the electronic structures are strongly coupled with the magnetic ground states in these compounds. In this talk, I will present our recent studies of the magnetic properties of some important iridates, including the potential Weyl semimetal $Y_2Ir_2O_7$. In particular, I will present our dc magnetization measurements and electron spin resonance study that suggest the existence of novel magnetic ground states. I will also discuss the possible origins of the magnetic ordering at low temperatures.

About the Speaker

Shixiong Zhang (P FLô) received his B.S. degree in Physics from the University of Science and Technology of China in July 2004, and his Ph.D. also in Physics from the University of Maryland, College Park in December 2007. From 2008 to 2010, he worked as a postdoctoral associate in the Department of Materials Science and Engineering at Northwestern University. After that, he moved to Los Alamos National Laboratory, where he was a Director Funded Postdoctoral Fellow in the Center for Integrated Nanotechnologies. In 2012, he joined the faculty of Physics Department at Indiana University, Bloomington as an at In