College of Science
Department of Physics & Astronomy

WEEKLY CALENDAR

TEL: 225-578-2261
FAX: 225-578-5855
http://www.phys.lsu.edu

202 NICHOLSON HALL
Louisiana State University
Baton Rouge, Louisiana 70803-4001

WEEKLY CALENDAR

November 4 - 8, 2013

DEPARTMENTAL COLLOQUIUM

"Physics and Astrophysics with Gravitational Observations"

3:30 PM November 7, 2013
109 Nicholson Hall

Emanuele Berti
University of Mississippi

Host: Parampreet Singh

• Refreshments served at 3:10 PM in 232 (Library) Nicholson Hall •

The first detection of gravitational radiation will be a watershed moment in modern astronomy. Detections may finally become routine when Advanced LIGO, Virgo and KAGRA go online. In preparation for this new dawn of astronomy, we should develop a long-term strategy to learn as much as possible from individual gravitational-wave observations and from the statistical properties of observed systems. In this talk I will focus on hypothetical detections of compact binary mergers, and I will address two central questions in the development of this strategy: 1) Can we constrain the formation history of compact binaries using Earth-based and space-based gravitational-wave observations? 2) What sort of strong-field tests of general relativity will be possible with Earth- and space-based detectors?

LA-SiGMA
Louisiana Alliance for Simulation-Guided Materials Applications

Fall Seminar

Brian Sales
Materials Sciences and Technology Division, Oak Ridge National Laboratory

"Surprises in Material Physics"

3:30pm - 4:30pm, Wednesday, November 6, 2013

1008B, Digital Media Center, Louisiana State University

PUBLICATIONS:

1. "Lorentz transformation of blackbody radiation", G. W. Ford and R. F. O'Connell, Physical Review E 88, 044101 (2013).

LA-SiGMA

Louisiana Alliance for Simulation-Guided Materials Applications

Fall Seminar
3:30pm - 4:30pm, Wednesday, November 6, 2013
1008B, Digital Media Center, Louisiana State University

Surprises in Material Physics

By

Brian Sales

Materials Sciences and Technology Division

Oak Ridge National Laboratory

One of the joys of experimental material physics is the discovery of something new and unexpected. This presentation will discuss some of my group's recent research that led to several surprising results. The surprises range from a giant Seebeck coefficient in CrSb2, to the observation that BaFe2As2 is not tetragonal at room temperature.

Our group does science driven synthesis of new materials, often as single crystals. Most of our recent research has focused on interesting relationships among magnetism, superconductivity and thermal conductivity. For example, in some materials magnetic excitations can carry substantial amounts of heat, while in others they may be responsible for high-temperature superconductivity. After providing a brief overview of my group's research, I will discuss three topics: (1) the use of nanoscale structural and L-edge spectroscopy on a large number of Fe-based superconductors (2) the properties of CrSb2, a quasi-1d antiferromagnetic semiconductor and (3) the use of thermal conductivity measurements near Tc as a screening tool for magnetically mediated superconductors. This research is supported by the Department of Energy, Basic Energy Sciences, Materials Sciences and Engineering Division.

Brian Sales - has over thirty years of experience with the synthesis, and characterization of unusual electronic and magnetic materials, particularly those involving rare-earth elements. Dr. Sales has received awards from the U. S. Department of Energy, IR-100, and Science Digest and he was named the 1985 Inventor of the Year and 2007 Distinguished Scientist of the year at ORNL. Dr. Sales has authored more than 300 papers, six patents and five book chapters. His work has been cited more than 13,000 times and his current h number is 60. Thirty of his papers have each been cited more than 100 times. Nine of the papers are on new thermoelectric materials, thirteen on high Tc superconductivity, three on correlated electron materials, two on oscillatory catalytic reactions, and one on low dimensional magnetism, batteries, and nuclear waste storage. Of the thirty papers Sales was either the first or primary author on eleven. Sales has also worked on materials for the disposal of high-level nuclear waste and developed techniques for measuring the intermediate range order in phosphate glasses. Sales was made an ORNL Corporate Fellow in 2012.

UNO *- Liberal Arts Building 234*

LATech *- PML 1015, Center for Instructional Technology, at the Wyly Tower*

Note, this seminar will ONLY be available via abobe connect http://connect.lsu.edu/la-sigma/