

WEEKLY CALENDAR

27 March 2006



Department of Physics and Astronomy
202 Nicholson Hall
Louisiana State University and A&M College
Baton Rouge, Louisiana 70803-4001
Tel: 225-578-2261 / Fax: 225-578-5855
<http://www.phys.lsu.edu>



Material Science & Engineering Seminar

3:40PM / Wednesday, 29 March 2006 / Room E-130 Howe-Russell

Host: Phil Sprunger, PhD

The Manifestations of Broken Symmetry: The Surface Phases of $\text{Ca}_x\text{Sr}_{2-x}\text{RuO}_4$

Ward Plummer, PhD

University of Tennessee and Oak Ridge National Laboratory

Correlated electron materials, like the transition-metal oxides (TMO), are characterized by close coupling between the lattice, electrons, and spin. The interesting functionality of these materials is a delicate balance between many competing ground states. Creating a surface, even in layered TMOs, significantly disturbs this delicate balance, which should produce different phases at the surface. The surface phase diagram of the layered TMO series $\text{Ca}_x\text{Sr}_{2-x}\text{RuO}_4$ will be used to demonstrate this hypothesis. Surface reconstruction occurs for $x < 0.5$, a reduction in the Mott insulator-to-metal transition temperature occurs for $x > 1.7$, shifts in the structural transition for $x > 1.5$ and the order of the transition are observed. The surface structure is determined using newly developed LEED $I-V$ codes. The electronic structure is observed with ARPES, STM, and STS, while ELS is used to measure the surface vibrational modes.

General Seminar

3:40PM / Thursday, 30 March 2006 / Room 109 Nicholson

Canceled

Special Announcement

Landolt Astronomical Observatory Dedication Ceremony

7:30PM / Thursday, 30 March 2006 / Observatory

- Presentation of the key-to-the-observatory to Dr. Arlo Landolt by Chancellor Sean O'Keefe
- Observe the Crescent Moon and the Rings of Saturn through the 11.5" Clark Refractor
- Refreshments will be served

Reminder

The Steering Committee will meet on Tuesday, 28 March 2006, at 3:40pm in Room 201 Nicholson.

Publications

S. Habib, Kurt Jacobs, and K. Shizume. Emergence of chaos in quantum systems far from the classical limit. *Physical Review Letters* **96**, 010403-(4), 2006.

J. Combes and Kurt Jacobs. Rapid state reduction of quantum systems using feedback control. *Physical Review Letters* **96**, 010504-(4), 2006.

Muxin Han and Yongge Ma. Dynamics of a scalar field in a polymer-like representation. *Class. Quantum Grav.* **23**, pp. 2741-2760, 2006.

Muxin Han and Yongge Ma. Master constraint operators in loop quantum gravity. *Physics Letters B*, pp. 225-231, 2006.