

Weekly Calendar and News

September 19-24, 2016

Nuclear Seminar Series

"Total Absorption Spectroscopy and its Influence on Reactor Decay Heat and Reactor Antineutrino Fluxes"

B. C. Rasco

JINPA, Univ. of Tennessee, and Oak Ridge National Laboratory

3:30-4:30 pm Tuesday, September 20, 2016

Room 435 Nicholson Hall

Measurements of antineutrinos from nuclear reactors show two interesting anomalies: an overall 5% deficit of flux and an excess of antineutrinos with energies around 5 to 7 MeV. These anomalies, if true, suggest exciting new physics beyond the standard model. However, the interpretation of reactor neutrino fluxes depends upon the decay properties of many neutron-rich fission fragments. We have recently studied the decay of 70 products of uranium fission using the Modular Total Absorption Spectrometer (MTAS). MTAS was constructed at ORNL and consists of over one ton of NaI arranged in 19 separate hexagonal modules. Dr. Rasco will discuss basic reactor physics, the reactor antineutrino spectrum, the MTAS detector, and the significant impact of his measurements on understanding the reactor antineutrino flux and reactor decay heat.

Please note there is not a scheduled colloquium this week

New Publications

- "[Quantum self-gravitating collapsing matter in a quantum geometry](#)" by Miguel Campiglia, Rodolfo Gambini, Javier Olmedo and Jorge Pullin . Classical and Quantum Gravity, Volume 33, Number 18
- "[Ultrathin two-dimensional superconductivity with strong spin-orbit coupling](#)" by Nam, Kim and Adams, et. al. doi: 10.1073/pnas.1611967113. September, 2016

LSU Physics & Astronomy in the News

- **The 2015-16 Department of Physics & Astronomy newsletter is online.** Read about the latest events, news and accomplishments of our faculty, students and alumni.
<http://www.lsu.edu/physics/news/2015-2016newsletter.pdf>
- **[A Planet for the Ages: Alan Stern Gives Pluto Talks at LSU](#)**. Last week Alan Stern, a New Orleans native, came to LSU to present the results of the [New Horizons mission to Pluto](#) for the Max Goodrich Distinguished Lecture Series. Read a recap and watch his interview in the College of Science new blog.
<http://lsuscienceblog.squarespace.com/blog/2016/9/7/a-planet-for-the-ages-alan-stern-gives-pluto-talks-at-lsu>

Saturday Science

“Discovering the Newest Species in the Human Lineage: Homo naledi”

Juliet Brophy, LSU Department of Geography and Anthropology
Saturday, September 24, 2016, 10:00 - 11:15 AM,
Room 130

Homo naledi is the newest member of our Homo species lineage. The speaker, Dr. Juliet Brophy, is a member of the international team that recently described the fossils of this species.

Events

Join us for our Physics & Astronomy Department
Alumni Tailgate
Saturday, October 22, from 3-6 pm
in the Quadrangle outside Nicholson Hall