Welcome to the ICMT
Thursday, December 12: Reading Day/IT No Change Period in effect

Thursday, December 12: Thesis Defense: "SEARCH FOR EXOTIC HIGGS BOSON DECAYS TO FOUR LEPTONS WITH THE ATLAS DETECTOR"
Time: 9:15 am  Location: 276 Loomis Laboratory

Time: 2:00 pm  Location: 222 Loomis Laboratory

Friday, December 13: "First results on the masses and radii of neutron stars from NICER: The mass, radius, and equation of state of the pulsar J0030+0415"
Time: 10 am  Location: 464 Loomis Laboratory

Visitors:

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**Thesis Defense**

**Title:** Search For Exotic Higgs Boson Decays to Four Leptons with the Atlas Detector

**Speaker:** Huacheng Cai, University of Illinois at Urbana-Champaign

**Date:** Thursday, December 12, 2019

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**Title:** Engineering Superconductivity in Semiconductor Nanowires for Quantum Device Applications

**Speaker:** Stephen Gill, University of Illinois at Urbana-Champaign

**Date:** Thursday, December 12, 2019

**Time/Location:** 2:00 pm / 222 Loomis
First results on the masses and radii of neutron stars from NICER: The mass, radius, and equation of state of the pulsar J0030+0415

Speaker: Frederick Lamb, University of Illinois

Date: Friday, December 13, 2019

Time/Location: 10:00 am / 464 Loomis

Abstract: I will report the mass and radius of the isolated 205 Hz millisecond pulsar PSR J0030+0451 estimated by the members of the Neutron Star Interior Composition Explorer (NICER) team, using the first 18 months of NICER observations of this pulsar, and the implications of these estimates for the equation of state of neutron-star matter. I will describe the analysis of the observations performed by the Illinois-Maryland collaboration and the results obtained by this collaboration. These results were obtained using a Bayesian inference approach to analyze this pulsar’s energy-dependent soft X-ray pulse waveform. I will describe the data we used, how we processed the data, our theoretical modeling of the pulse waveform, and how we approached and solved the parameter estimation problem. I will answer questions about the data, analysis, and results. Discussion will be encouraged.