PIER PHOTON SCIENCE COLLOQUIUM

The Universe in the Lab: X-ray Spectroscopy of Highly Charged Ions

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Viewed in X-rays, the universe displays an astounding preeminence of iron. Black hole accretion disks, supernova remnants, stars: all these objects show prominent lines from highly charged iron ions. Moreover, the radiative opacity controlling energy transfer inside stars crucially depends on traces of iron ions. Predictions of the transition energies and probabilities of their diagnostic lines are still insufficiently accurate. Laboratory data have become more accurate, but conventional X-ray spectroscopy is already at its resolution limits. With a novel type of X-ray spectroscopy, demonstrated with an electron beam ion trap at LCLS and PETRA III, previous limitations are overcome in resonant excitation of ions in charge states as high as Fe24+ and at photon energies in the 6 keV range.

Date: Friday, February 24, 2012, 02:15 p.m.

Place: Bldg. 28c, seminar room

Come early: You are invited for coffee and cookies.

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