

Robin Santra:

## Absorption

The electronic structure of xenon is the most complex of all the nonradioactive noble-gas species. In the x-ray regime, deep inner-shell ionization initiates a cascade of electronic decay processes mediated by electron-electron interactions. Strongly collective electronic behavior may be triggered in xenon using extreme ultraviolet radiation. The first part of the talk addresses combined theoretical and experimental work on x-ray multiphoton ionization of xenon at photon energies of 1.5 keV, 2 keV, and 5.5 keV. The second part of the talk focuses on electron-correlation-induced decoherence among ionization channels accessed via extreme ultraviolet photoionization. The talk concludes with a brief discussion of *ab initio* calculations on high-harmonic generation in xenon using a driver wavelength of 1.8 micrometer.