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Department of Physics and Astronomy*

**Dr. Sujoy Roy**

**Advanced Light Source  
Lawrence Berkeley National Laboratory**

***Probing spatiotemporal correlations of interfaces  
with magnetic speckles***

The emerging technology of spintronics depends heavily on nanoscale architectures and quantum confinement. Confined geometries such as found at the interfaces enhances fluctuation. This talk will focus on various examples where the unique spatial sensitivity of soft coherent x-ray beam has been exploited to measure static and dynamic properties of buried magnetic interfaces. By measuring the time evolution of element specific speckle pattern using coherent x-rays we have determined temperature dependent domain dynamics near magnetic phase transition of an ultrathin Cobalt film. We will discuss lensless x-ray imaging and holography in reflection geometry, and its potential to image magnetic Bragg planes. Finally we will discuss temporal evolution of equilibrium fluctuation of a helical antiferromagnet.

**Host:  
Dr. Axel Enders  
Department of  
Physics & Astronomy**

**Wednesday, April 11  
4:00 pm  
Room 136 Jorgensen Hall**

**Please Post**