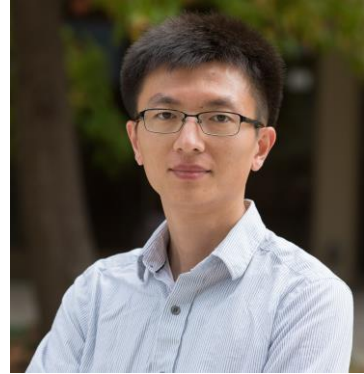


Journal Club

Renkai Li

SLAC



Pursuit of ultimate electron beams for atomic visualization

Bright electron beams empower a wide range of modern scientific instruments, including storage ring light sources, high energy colliders, and microscopes. These machines and electrons beams, although are of diversified scales and parameters, have many similarities in beam physics and simulation tools, as well as key technologies on beam generation, acceleration, manipulation, and characterization. In this Seminar, we will discuss the latest advancements on how we push the limit of beam brightness and precisely shape the beams for ultrafast diffraction, imaging, and spectroscopy applications. We will also outline future research directions on bright beams and next generation electron scattering instruments. Connections in beam physics and instrumentation with storage ring research will be briefly mentioned. Finally, we will share the thoughts on the dream of generating the 'ultimate' – fully transversely and longitudinally coherent electron beams. Brighter electron beams will enable new capabilities for measuring dynamics on atomic spatial, temporal, and energy scales, and open up many breakthrough science opportunities in condensed-matter physics, material science, chemistry, and bio-science.



Tuesday, Nov. 15, 2016

3:00pm

120 Physical Sciences Bldg.