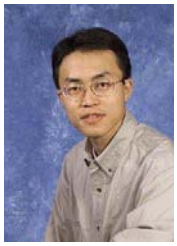
The Chemical Imaging Initiative
Presents

Dr. Chao Yang
Computational Research Division
Lawrence Berkeley National Laboratory



"Computational Approaches to Large-scale X-ray Image Electron Analysis"

May 20, 2011
EMSL 1077
11:00 am

The latest advances in X-ray and electron light source and detector technology have enabled scientists to collect a large amount of data at a rapid rate. These data need be analyzed efficiently to produce useful structure information of various types of materials and biological objects (e.g. cells and molecules) at different scales and resolutions. These analyses often require solving large-scale inverse problems computationally.

In this talk, I will describe several computational approaches to solve two of these inverse problems. In the first problem, our objective is to reconstruct the 3D scattering intensity of a molecule from a large number of noisy 2D diffraction patterns with unknown relative orientations. In the second problem, we try recover a real space image from a large number of smaller diffraction frames produced by a moving probe.

http://crd.lbl.gov/~chao/

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