The Beams and Applications Seminar Series

Magnetostatics and Physical Optics Calculations for Synchrotron Radiation Sources Using RADIA and SRW

Oleg Chubar
SOLEIL, France

Bldg. 401, rm B2100
Monday, October 22, 1:30 pm
(please note special day)

Host: Liz Moog, ASD

The ensemble of the RADIA and SRW computer codes enables calculation of a 3D magnetic field created by an insertion device or an accelerator lattice magnet, calculation of synchrotron radiation (SR) by relativistic electrons traveling in this magnetic field, and finally the simulation of SR wavefront propagation through an optical beamline to a sample in user experiment. All these calculations are efficiently performed in the framework of classical electrodynamics, practically without using any limiting approximations, such as 2D approximation for magnetostatics, far-field approximation for SR emission, or geometrical optics approximation for wavefront propagation. This allows for performance optimization of the 3rd and 4th generation SR sources up to real physical limits. The talk will include brief description of the calculation methods used by the RADIA and SRW, and multiple application examples of these codes at ESRF and SOLEIL.

For more information visit

http://aps.anl.gov/News/Meetings/Beams_and_Applications_Seminars/

Visitors from off-site please contact Carmen Nolasco (mnolasco@aps.anl.gov, 630-252-6159) to arrange for a gate pass.