

SwissFEL Workshop 2: Scattering and diffraction experiments



Contribution ID: 7

Type: **not specified**

Time-resolved diffuse X-ray scattering

Monday, 21 November 2011 13:30 (5 minutes)

The relaxation of hot carriers through phonon interactions plays a crucial role in the physics of many highly interesting condensed matter systems, ranging from photovoltaic cells to strongly correlated systems exhibiting phenomena like superconductivity and charge density waves.

The experimental methods employed today to study phonon processes in these systems, however, either lack the time or the momentum resolution necessary to provide a comprehensive picture of the nonequilibrium phonon dynamics.

The combination of atomic scale wavelength, high photon flux and femtosecond duration of the SwissFEL X-ray pulses will make time-resolved tracking of the occupation of individual phonon branches throughout the whole Brillouin zone possible by recording two-dimensional diffuse scattering images following photoexcitation with a femtosecond laser pulse.

Primary author: Mr HUBER, Tim (ETH Zürich)

Co-author: Prof. JOHNSON, Steve (ETH Zürich)

Presenter: Mr HUBER, Tim (ETH Zürich)

Session Classification: Poster Presentation