

Time-resolved X-Ray Scattering Experiments at SPPS, and Beyond

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I will discuss recent experiments that examine rapid laser-induced melting in solids. We use x-ray pulses with durations of less than 100 femtoseconds, produced from the Sub-Picosecond Pulse Source (SPPS, <http://www-ssrl.slac.stanford.edu/jhhome.html>) at the Stanford Linear Accelerator Center (SLAC). Time-dependent x-ray diffraction from several crystalline planes has been analyzed.

Additionally, I will summarize the capabilities of a new short pulse x-ray user facility for the study of femtosecond phenomena in both the hard and soft x-ray regions of the spectrum, Beamline 6 at the Advanced Light Source (ALS) at Lawrence Berkeley National Laboratory (LBNL) (http://www.als.lbl.gov/als/als_users_bl/bl_table.html) and plans for developing experiments and collaborations at the proposed x-ray free electron laser, the Linac Coherent Light Source (LCLS, <http://www-ssrl.slac.stanford.edu/lcls/>), at SLAC.