



First LCLS Call for Proposals

Experiments with soft X-rays at the AMO station

Closing date: September 1, 2008

The Stanford Linear Accelerator Center SLAC is currently building the world's first hard X-ray free-electron laser, the Linac Coherent Light Source (LCLS) (<http://lcls.slac.stanford.edu>), which will start operation in summer 2009. LCLS will produce intense, sub-picosecond pulses of spatially-coherent X-rays. In a flash of about 100 femtoseconds duration, LCLS will provide 10^{12} X-ray photons, roughly as many photons as obtained in one second at today's best storage-ring-based synchrotron radiation facilities. LCLS X-rays will enable investigation of systems at the atomic and nano-scale under conditions where the matter is far from equilibrium, and actually undergoing real-time reactions.

Four experimental stations are currently being constructed to serve the following scientific thrust areas:

1. Atomic, molecular and optical science (AMO)
2. Coherent imaging of non-periodic objects (CXI)
3. Coherent scattering of nano-scale fluctuations (XCS)
4. Diffraction studies of stimulated dynamics (XPP)

Two more stations are currently being planned to serve:

5. High energy density science (HED)
6. Investigation of materials with soft X-rays (SXR)

It is the goal of LCLS to attract a large number of users from diverse fields and to enable a broad set of important experiments that take advantage of the unique capabilities of LCLS.

LCLS will begin operation in the second half of 2009, providing X-rays in the spectral range 0.8 to 2 keV. The AMO experimental station will be ready for commissioning and first operation during this period. LCLS hereby invites the world's research community to submit scientific proposals for experiments with soft X-rays at the AMO experimental station. Proposals for the first LCLS operation period (July-December 2009) must be submitted by September 1, 2008.

The proposal process is described at the LCLS User web site <<http://lcls.slac.stanford.edu/user/>> (available by July 1st, 2008).

During 2010 it is anticipated that the spectral range of the LCLS will be extended to 8 keV. A call for proposals for the first LCLS hard X-ray station, XPP, as well as for additional soft X-ray experiments, will be issued in early 2009.

Specific questions about the AMO station should be directed to John Bozek (jdbozek@SLAC.Stanford.EDU).