LCLS Users Virtual Meeting

Mike Dunne
August 2019
LCLS is going through a series of major upgrades. The user program will restart in early 2020.
• **Run 18: March to December 2020**  
  o Extended duration to allow for soft X-ray commissioning, and to meet user demand for existing instruments after our long downtime
• **Hard X-ray instruments & MEC:**  
  o Restart in March
• **Soft X-ray instruments**  
  o Begin commissioning in April (TMO) and June (ChemRIXS), followed by an “early science” period with collaborating users, followed by PRP access

Tim Maxwell will provide details of the anticipated beam performance for Run 18
Our soft X-ray instruments will be commissioned over the next 2 years.

Provides ~ 1 year commissioning at 120 Hz prior to the LCLS-II beam. See LCLS website for full details of future capabilities.
Scientific Campaigns

- LCLS has been dominated by single experiments lasting 1 to 5 shifts
  - LCLS-II will double the number of experiments that can be performed, and now there are 4 other hard X-ray XFELs online
- Following discussions with DOE, and the LCLS SAC and UEC, we will set aside ~10% of our beamtime to support more extensive research programs (‘campaigns’) conducted by comprehensive research teams
  - Tackle significant scientific questions that would be transformed by a series of coordinated beamtimes
- We will trial this in Run 18
  - Open call in the area of “Structural dynamics of complex matter”
  - Director’s Discretionary campaign in the area of “attosecond science”
- Further discussion of future directions at the LCLS Users Meeting in September

Bob Schoenlein will provide full details of the Campaign approach