

The SwissFEL X-ray Laser and its Applications in Correlated Electron Materials

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Beginning in the year 2017, the SwissFEL X-ray laser at the Paul Scherrer Institut will provide users with ultra-bright, 20 femtosecond pulses of X-rays, with photon energies 180 – 12'400 eV, with a high degree of transverse coherence and at a repetition rate of 100 Hz. Shortly later, the performance will be extended to include simultaneous operation of two beamlines, circular polarization, high longitudinal coherence from seeding and a synchronized source of energetic terahertz pulses. The status of the project will be presented, and experimental methods will be proposed to perform novel time-resolved spectroscopy and diffraction/imaging on correlated electron materials.

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Session Classification: New opportunities with x-ray FELs