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The European XFEL – First results and prospects for new applications

Friday, 12 July 2019 08:30 (30 minutes)

European XFEL is an international large-scale user facility for research using x-ray FEL radiation. It offers opportunities for x-ray FEL research in the x-ray range from 0.25 to 25 keV at initially six science instruments, each dedicated to a specific area of application. User operation started in 2017 after about 8 yrs of construction at two instruments for ultrafast chemical reactions and (time-resolved) determination of structures of biomolecular systems. European XFEL offers the unique possibility to deliver up to 27.000 x-ray pulses per second.

In parallel to first operation further four instruments were assembled, commissioned and have been opened to first user experiments. These instruments complete the experimental suite of European XFEL and provide users with the means to study many different types of samples – from highly excited ions via complex solids to huge bio-machines – under a huge variety of environments – from vacuum via natural solvents to extreme pressures and field strength – by also applying ultrashort lasers of variable wavelength to study dynamics. Such experiments will support fundamental research applications to e.g. solve the structure of complex biomatter, study ultrafast chemical processes, disentangle electronic state dynamics of complex materials, or reveal the properties of matter under extreme conditions.

Choix de session parallèle

6.4 Résultats scientifiques récents obtenus avec les XFEL

Primary author: TSCHENTSCHER, Thomas (European XFEL, Schenefeld, Germany)

Presenter: TSCHENTSCHER, Thomas (European XFEL, Schenefeld, Germany)

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