Contribution ID: **12** Type: **Contributed poster**

XFEL Photon pulses Database (FAST-XPD) at the European XFEL

Monday, 25 June 2018 18:15 (15 minutes)

The best way for planning user experiments would be performing start-to-endsimulations tracing radiation pulses from its origin (undulator) through a beamline (mirrors, monochromators etc) to a target, simulation of physical processes of the radiation interaction with a sample, and simulation of detection process of related debris (photon, electrons, ions, etc) by detectors. Modern FEL simulation codes allow to predict all the details of the output radiation pulses from x-ray FEL (3D maps of radiation fields for the fundamental and higher frequency harmonics). We present an XFEL photon pulses simulation database accessible through public web-server that allows the access to the data produced by time-dependent FEL simulation code FAST. A web application allows to pick up a selected photon pulse data in the hdf5 format for any given XFEL operation mode (electron energy, charge/photon pulse duration, active undulator range etc) suitable for statistical analysis, propagating through the optical system, interaction with the sample, etc. The pulses post processing data, including the gain curve, time structure, source size and far field angular divergence are also provided.

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Session Classification: Poster session