Contribution ID: **32** Type: **not specified**

Bunch Profile Reconstructions based on THz Spectroscopy at EuXFEL

Thursday 17 October 2019 10:49 (2 minutes)

At the European X-ray Free-Electron Laser, the spectral intensity of coherent diffraction radiation emitted at a screen with an aperture is monitored by a single-shot THz spectrometer. The spectrometer covers the range from 0.7-60 THz, which enables longitudinal form factor measurements of the electron bunch at the final compression stage. Iterative phase retrieval algorithm are used to obtain the missing phase information in the frequency domain for bunch current profile reconstructions.

As the electron bunch passes through the aperture without any disturbance and the detector system of the spectrometer allows for MHz readout rates, all bunches inside the bunch train can be characterized non-invasively and simultaneously to FEL operation.

This contributions describes form factor measurements along the bunch train and shows the resulting current profiles.

Primary authors: Dr SCHMIDT, Bernhard (DESY); Dr GERTH, Christopher (DESY); LOCKMANN, Nils (DESY); Mr WESCH, Stephan (DESY)

Presenter: LOCKMANN, Nils (DESY)

Session Classification: Poster Session

Track Classification: Poster: Beam Dynamics