



Contribution ID: 132 Contribution code: FRAO4

Type: **Contributed Oral**

FLASH2020+ Pump-Probe Laser Upgrade: Concept and Current Status

Friday, 26 August 2022 10:10 (25 minutes)

Time-resolved experiments are increasingly relevant in modern FEL user facilities. With the FLASH2020+ upgrade project, the pump-probe capabilities of the FLASH will be extended. Besides offering fixed wavelengths (1030 nm fundamental and its harmonics), tunable wavelengths are under development: sub-150 fs long tunable mid-infrared (2-5 microns) pulses for the solid-state community and sub-40 fs long tunable UV-VIS (200-500 nm) pulses for the general chemistry, atomic molecular and optical physics (AMO) communities. The optical pulses will be fully synchronized with the FEL pulses and are generated with up to a 1 MHz repetition rate in bursts of 0.6 ms in length at 10 Hz. Since we are limited by our pump-lasers available fixed average power, we can also reduce the repetition rate to 200kHz or less for delivering higher energy pulses for experiments using small density targets (such as gas phases or clusters).

Here, we present our pump-probe laser concept: from the laser front end to the beam delivery to experimental end-stations and instruments. We would be happy to receive any feedback from the users on their needs so we can adjust our concept as needed.

I have read and accept the Privacy Policy Statement

Yes

Primary authors: Dr ALISAUSKAS, Skirmantas (Deutsches Elektronen-Synchrotron DESY); Dr VIOTTI, Anne-Lise (Deutsches Elektronen-Synchrotron DESY); Dr MANSCHWETUS, Bastian (Deutsches Elektronen-Synchrotron DESY); Dr CANKAYA, Huseyin (Deutsches Elektronen-Synchrotron DESY); Dr SEIDEL, Marcus (Deutsches Elektronen-Synchrotron DESY); Dr TAJALLI, Ayhan (Deutsches Elektronen-Synchrotron DESY); Dr HARTL, Ingmar (Deutsches Elektronen-Synchrotron DESY)

Presenter: Dr ALISAUSKAS, Skirmantas (Deutsches Elektronen-Synchrotron DESY)

Session Classification: User experiments

Track Classification: User experiments