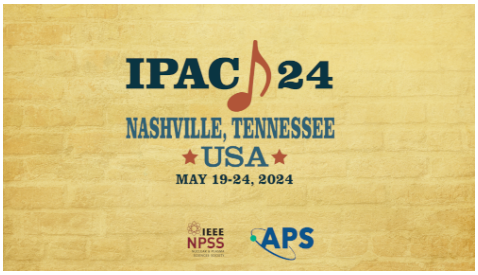

Contribution ID: **2185** Contribution code: **SUPG048** Type: **Poster Presentation**

Simulations of an electro-optical in-vacuum bunch profile monitor and measurements at KARA for use in the FCC-ee

Sunday, 19 May 2024 16:00 (2 hours)

The Karlsruhe Research Accelerator (KARA) is an electron storage ring and synchrotron light source for accelerator research at the Karlsruhe Institute of Technology (KIT). It features an electro-optical (EO) in-vacuum bunch profile monitor to measure the longitudinal bunch profile in single shot on a turn-by-turn basis using electro-optical spectral decoding (EOSD). A simulation procedure has been set up to evaluate its suitability as a beam instrumentation for the operation of the future electron-position collider FCC-ee. In order to assess the simulations, this contribution focuses on a comparison to EO sampling (EOS) measurements at KARA and a study on the heat load of the EO crystal due to the expected high bunch repetition rate envisioned for FCC-ee.

Footnotes

Funding Agency

M. R. acknowledges the support by the doctoral school KSETA and funding from EU Horizon 2020 (951754) within the FCCIS project.
M. M. P. acknowledges funding by BMBF contract number 05K22VKB.

Paper preparation format

LaTeX

Region represented

Europe

Primary author: REISSIG, Micha (Karlsruhe Institute of Technology)

Co-authors: MUELLER, Anke-Susanne (Karlsruhe Institute of Technology); HAERER, Bastian (Karlsruhe Institute of Technology); BRUENDERMANN, Erik (Karlsruhe Institute of Technology); NIEHUES, Gudrun (Karlsruhe Institute of Technology); PATIL, Meghana (Karlsruhe Institute of Technology); RUPRECHT, Robert (Karlsruhe Institute of Technology)

Presenter: REISSIG, Micha (Karlsruhe Institute of Technology)

Session Classification: Student Poster Session

Track Classification: MC6: Beam Instrumentation, Controls, Feedback, and Operational Aspects: MC6.T03 Beam Diagnostics and Instrumentation