

Control of bunch oscillations using Bunch-by-Bunch capable systems at KARA

Thursday, 30 September 2021 10:30 (5 minutes)

At the KIT Synchrotron KARA several systems are in place to measure and interact with individual electron bunches. A Bunch-by-Bunch (BBB) feedback system provides capabilities to control individual bunch motion whereas KAPTURE allows to readout multiple synchrotron radiation detector channels on the bunch-by-bunch level. This allows to closely study coherent radiation effects in our short bunch operation mode much more effectively. It also allows to create a feedback channel based on the detector signals processed with machine learning algorithms, in which the BBB feedback system is used to manipulate bunch motion to optimize the radiation characteristics. This contribution will give an overview of how these two systems can interact with each other to achieve this goal.

Summary

Primary author: BLOMLEY, Edmund (KIT)

Co-authors: BROSI, Miriam; Mr BOLTZ, Tobias; CASELLE, Michele (KIT)

Presenter: BLOMLEY, Edmund (KIT)

Session Classification: Session Beam Controls