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Correlation of Orbit Disturbance in the Photoinjector with SASE Performance at the European XFEL

Wednesday, 24 August 2022 17:10 (20 minutes)

We present experimental observation for the impact of an introduced orbit disturbance in the photoinjector section on the SASE performance at the European XFEL. An orbit bump is first created and then closed by the orbit feedback downstream, that is, the orbit leaving the injector section stays the same while presumably only causing a disturbance to the bunch. With the same orbit launched into the undulators, first measurement data have shown a correlation between the magnitude of the introduced orbit disturbance in the injector and the SASE intensity in the undulators. Similar behaviors are observed as well for bunch train operation. The results will be shown and the discussions are given.

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Yes

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