

T. Schowalter: Single-quad scan method for slice emittance

Report of Contributions

Contribution ID: 3

Type: **not specified**

Single-quadrupole-magnet scan to measure the slice transverse properties of electron beams

Tuesday 21 November 2023 10:45 (30 minutes)

Measurement of the time-resolved or “slice” transverse properties of the electron beam is fundamental for X-ray free-electron lasers like SwissFEL. Multiple-quadrupole-magnet scans are the standard approach to measure the slice emittance and optics. This talk introduces a new method for measuring the slice beam parameters utilizing a single-quadrupole-magnet scan. Besides scanning less magnets, the approach is more intuitive, generally requires smaller magnet strengths, and allows designing the measurement set-up in a convenient way. We present simulated and experimental results at the SwissFEL injector that show the validity of the method.

Presenter: SCHOWALTER, Tyler**Session Classification:** Focus report