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Non-destructive definition of emittance using the compton back-scattering and AI machine learning

Thursday, 11 May 2023 16:30 (2 hours)

The work goal is to present the concept and the model for the reconstruction of the beam emittance from the spectrum of the scattered photons. The Compton process is a back-scattering of a laser pulse on the relativistic electron beam and is at the base of X-ray sources, as for instance, the project STAR. In the scattering process, the scattered photons get energy boost. The energy boosted photons carry also informations about the transverse momentum of the initial electron bunch. In this work we present the theory and the model implementation on how the beam emittance can be reconstructed from the spectrum of the scattered photons.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

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