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Multi-object optimization based on high gradient C-band photoinjector

Monday, 8 May 2023 16:30 (2 hours)

Ultra-high brightness and ultra-low emittance electron beams can great enhance the radiation power in light sources, but the electron beams are prone to nonlinear effects in the velocity compression, which leads to the asymmetry of the beam. In this paper, a multi-objective optimization method based on NSGA-III is proposed to achieve a good symmetry in the C-band photocathode injector with an emittance lower than 0.5 mm mrad and a peak current higher than 100 A.

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Footnotes

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Yes

Primary author: JIANG, Shimin (University of Science and Technology of China)

Co-author: LIU, Xingguang (Chinese Academy of Sciences)

Presenter: JIANG, Shimin (University of Science and Technology of China)

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