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Characterisation and optimisation of a C-band photo-injector for compact light sources

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We performed an optimisation study of a C-band photoinjector for high-charge electron beams. Such a device is capable of producing high brightness electron beams, with low energy spread and small transverse emittance, which are properties required by Inverse Compton Scattering radiation sources and compact light sources in general. This work aimed to carry out, via numerical simulations, optimisation and benchmark results of the beam generated by such photoinjector, in the pursuit of its real application in the context of current projects, namely EuPRAXIA@SPARC_LAB, and proposals such as BoCXS at the University of Bologna.

Footnotes

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