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Visualization Tools for EGUN Simulations

Thursday 14 August 2025 16:00 (2 hours)

DC electron guns are essential sources of moderate-energy electron beams for both particle accelerators and klystrons. EGUN is one of the simulation software that is employed to design such DC guns. EGUN produces detailed data of electron rays trajectories for a given gun geometry, cathode temperature, bias-voltage, and beam current - whether space-charge limited or not. We use Mathematica and Python for advanced mathematical processing and visualization of the EGUN data visualization. For example, we generate phase-space plots at various longitudinal cross-sections and show the evolution of phase-space parameters along the beam axis. The visualization we generate is much richer than the simple trajectory plots generated by EPLOT software that accompanies EGUN. In this research work, we show the example of a practical Klystron gun and the results of our post-processing software.

Please consider my poster for contributed oral presentation

No

Would you like to submit this poster in student poster session on Sunday (August 10th)

Yes

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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