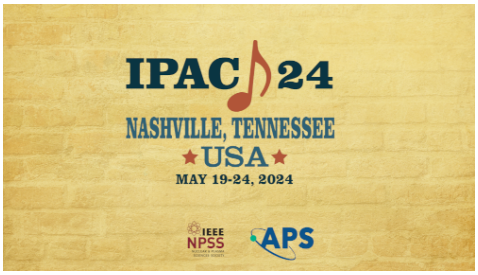

Contribution ID: **667** Contribution code: **MOPC22** Type: **Poster Presentation**

Simulations and lattice optimization of RF electron linac designed for VEGA LCS gamma-ray source

Monday, 20 May 2024 16:00 (2 hours)

The Variable Energy Gamma (VEGA) System is under implementation in Bucharest-Magurele Romania as one of the major components in the project of Extreme Light Infrastructure Nuclear Physics. The VEGA System is designed as an advanced Laser Compton Scattering gamma-ray source with unique parameters in terms of high spectral density, monochromaticity, high polarizability, and energy tunability. It brings new opportunities and is dedicated for photonuclear research in both applied and fundamental physics, and will be open for worldwide users. Optimization of spectral density and guaranty of monochromaticity of the gamma-rays impose the necessity to control both, transverse emittance and energy spread, putting strong requirements on electron beam dynamics. We present results from computer simulations carried out for the injector of the LCS gamma-ray source based on a room-temperature RF linac, and we investigate the lattice configuration to optimize the electron beam parameters at the virtual interaction point located at the end of the linac.

Footnotes

Funding Agency

Paper preparation format

LaTeX

Region represented

Europe

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Session Classification: Monday Poster Session

Track Classification: MC1: Colliders and other Particle and Nuclear and Physics Accelerators: MC1.A08 Linear Accelerators