Contribution ID: **808** Contribution code: **TUPM101** Type: **Poster Presentation**

RF and synchronization system for VEGA project

Tuesday 3 June 2025 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 (ELI-NP). Photon beams will be resulting from the Inverse Compton Scattering of laser photons off relativistic electrons. VEGA is dedicated for photonuclear research both in applied and fundamental physics and will be open for worldwide users.
The RF and synch system has to ensure stable, synchronized and coherent operation of all RF pulsed devices. It plays a crucial role in the overall performance of the particle accelerator and ultimately the beam quality. This paper presents the LLRF and synch system for the VEGA electron linac. It is based on commercial S-band Libera products from Instrumentation Technologies (Slovenia). Experience with its operation, tests results of key performance parameters and the current operational status together with plans for future upgrade are presented. Likewise the HLRF system for the RF photocathode gun and the TW cavities, based on klystrons followed by SLEDs and hybrid power dividers, is described here. Also the phase tuning of the RF cavities is discussed.

Footnotes

Paper preparation format

Word

Region represented

Europe

Funding Agency

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Session Classification: Tuesday Poster Session

Track Classification: MC2: Photon Sources and Electron Accelerators: MC2.A08 Linear Accelerators