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Linac gun driver for the Swiss Light Source 2.0

Tuesday 3 June 2025 16:00 (2 hours)

The Paul Scherrer Institute has developed advanced Linac gun driver electronics designed for use in Linear Accelerators, particularly for modern Synchrotron Light Sources. A prototype of this innovative gun driver was successfully evaluated during the final three months of user operations at the Swiss Light Source (SLS). The finalized design is now installed and will be integrated into the upgraded SLS 2.0, which is scheduled to undergo commissioning in 2025.
The new gun driver is engineered to achieve extremely short electron bunch lengths, a key requirement for SLS 2.0 top-up operations. It delivers single pulses with the following specifications: 80 ps fall-time, 120 ps FWHM, and a -300 V peak amplitude, with a jitter of less than 5 ps.
These enhanced performance parameters will facilitate a future redesign of the SLS Linac, making it more compact while further improving its functionality.
This presentation will outline the implementation of the new gun driver and showcase the results obtained during its evaluation.

Footnotes

Paper preparation format

LaTeX

Region represented

Europe

Funding Agency

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Author: GASPAR, Marcos (Paul Scherrer Institut)

Co-author: CRAIEVICH, Paolo (Paul Scherrer Institut)

Presenter: GASPAR, Marcos (Paul Scherrer Institut)

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