



Contribution ID: 1829 Contribution code: THPS30

Type: Poster Presentation

## Design and characterization of adjustable-length pulse generator for beam kicker system

Thursday, 23 May 2024 16:00 (2 hours)

The contemporary advancement in particle accelerator technology necessitates precise control over beam manipulation for various experimental and industrial applications. One pivotal aspect of this control resides in the generation and modulation of high-voltage pulse to manipulate the trajectory and behavior of particle beams within the accelerator systems. This extensive study delves into the design, development, and characterization of an adjustable-length pulse generator specifically tailored for a beam extraction kicker system, which is employed to navigate the beam out of the photon storage ring. The primary aim of this research is to engineer a versatile and reliable pulse-length modulation mechanism for a high-voltage pulse generation, which is capable of producing adjustable pulses with ultra-fine precision to meet the demanding requirements of beam manipulation within the accelerator setup. The system's design encompasses a meticulous integration of electronic components, waveform shaping modules, and control mechanisms to achieve the desired output.

### Footnotes

### Funding Agency

This work was supported by Los Alamos National Laboratory's Laboratory Directed Research and Development (LDRD) Program. 'LA-UR-23-33877'

### Paper preparation format

Word

### Region represented

North America

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**Session Classification:** Thursday Poster Session

**Track Classification:** MC7: Accelerator Technology and Sustainability: MC7.T16 Pulsed Power Technology