Contribution ID: **153** Contribution code: **WEP045** Type: **Poster Presentation**

High-Voltage Pulsed Power Generator for Beam Injection Systems

Wednesday 13 August 2025 16:00 (2 hours)

Beam injection systems in hadron colliders require kickers generating ±50 kV peak voltages into a 50 Ω impedance, with peak currents of 1000 A and sub-10 ns rise and fall times. This paper presents a novel high-voltage pulse power generator utilizing a dis-tributed pulser architecture. It combines gallium nitride (GaN) transistors in a Marx to-pology with an inductive adder, achieving nanosecond-scale switching speeds and high-power efficiency. Compared to other solutions such as based on MOSFETs or fast ioniza-tion dynistors, our development offers superior peak and average power performance, reduced system complexity, and enhanced reliability, marking a significant step forward in high-voltage pulse generation for accelerator applications.

Please consider my poster for contributed oral presentation

Yes

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

No

Footnotes

Funding Agency

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Yes

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