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## **Laser Wakefield Acceleration Experiments on the ZEUS Facility**

*Friday, 18 April 2025 15:50 (20 minutes)*

The Zettawatt Equivalent Ultrashort Pulse Laser System (ZEUS) is a user facility funded by the National Science Foundation and located at the University of Michigan in the US. ZEUS consists of a repetitive dual-beamline 3 PW laser system, a programmable multi-nanosecond pulse driver capable of delivering 100 J of energy, and three experimental areas with radiation shielding. It offers unique capabilities for studying fields such as nonlinear quantum electrodynamics, relativistic plasmas, particle acceleration, extreme laboratory astrophysics, and nuclear photonics. This presentation will provide an update on the progress of the ZEUS facility's performance, including the laser, target areas, and radiation shielding. It will also discuss the results of the initial commissioning experiments on multi-GeV laser wakefield electron acceleration and betatron radiation generation at the 1 PW level.

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