



Future Perspective for High-Intensity Laser
HED Science at the LLNL
WEDNESDAY, February 24 at 17:00 CET
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Future Perspective for High-Intensity Laser HED Science at the Lawrence Livermore National Lab

The Advanced Photon Technologies (APT) high-intensity High Energy Density (HED) science program at LLNL seeks to provide new capability in, and drive forward frontier HED with short-pulse laser science and applications. We will discuss recent work to develop laser-driven sources, including multi-ps, very high energy short pulse laser experiments on the NIF-ARC laser; and describe work towards a closed-loop paradigm to accelerate scientific discovery, integrating high-repetition-rate laser experiments, machine learning, and physics-based cognitive simulations. Using these novel tools, areas of active research include high-intensity laser interactions with matter, laser-driven secondary sources, plasma optics, future light sources, and the development of high-throughput diagnostics, targetry, modeling, and machine learning.

