
Laser-Driven Pulsed Neutron Source using Near-Critical Plasmas

A Data Management Plan created using DMPTool

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Data types and sources

Data will be generated from experiments and simulations using Vector-Particle-In-Cell (VPIC) kinetic code and Monte-Carlo N-Particle transport code. Both the experimental and simulation results will be published in open journals. The raw data will be archived in the LANL institutional storage facilities. A few research journals also provide associated raw data storage service. The raw data will be made available to other researchers, students and post-docs for further analysis and validation. Data will not include any trade secrets or PIO.

Content and format

Most of the raw experimental data will be stored as images in various formats such as TIFF, HDF. Analyzed experimental data will be stored in a table format using Excel. The simulation data will be stored at the LANL archive tapes.

Sharing and preservation

The publications will largely include the analyzed data. we will try to add raw data to the publications to the possible extent. We will utilize the raw data storage service if the journals provide one. The raw data will be made available upon request. The publications provide the contact information for requesting additional data.

Protection

The data generated will not contain PIO or compromise U.S. national, homeland, and economic security. It will recognize proprietary interests, business confidential information, and intellectual property rights; avoid significant negative impact on innovation and U.S. competitiveness; and otherwise be consistent with all applicable laws, regulations, and DOE orders and policies. The data will not involve human or animal subjects.

Rationale

The data generated will help elucidate the intense laser interaction with near-critical plasmas. The data will help us interpret the experiments and verify important scaling laws for compact neutron source development using lasers.

Software & Codes

The kinetic code VPIC is an open source code. Improvements to the VPIC code will be properly annotated and made available as an open source code.