

## Physics Design and Commissioning of the Mark-IV TMRS assembly at the Lujan Center

During the 2022 maintenance outage, installation was completed for the new generation of the spallation target-moderator-reflector-shield (TMRS), known as Mark-IV, at the Manuel Lujan Jr. Neutron Scattering Center (Lujan Center) within the Los Alamos Neutron Science Center (LANSCE). This paper deals with a physics design comparison between the previous and current targets, commission work, and the accurate determination of the target position using Laser Tracker Survey. At the end of 2022, we conducted a beam spot experiment with an active high-speed gated camera imager, which closely matched the predictions from our MCNP beam spot simulations.

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**Session Classification:** Target and Moderator