

Abstract Submitted
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Measurement of Delayed Neutron Production in a Tungsten Spallation Neutron Target ROBERT MAHURIN, GEOFFERY GREENE, University of Tennessee, JAREK MAJEWSKI, HILLARY SMITH, W. SCOTT WILBURN, Los Alamos National Laboratory, DAVID BOWMAN, SEPPO PENTTILA, Oak Ridge National Laboratory, LIBERTAD BARRON, Arizona State University, W. MICHAEL SNOW, Indiana University — We use neutron reflectometry to determine the contribution of delayed neutrons to the spallation spectrum at the Manuel Lujan Jr. Neutron Scattering Center at the Los Alamos National Laboratory. The delayed neutron fraction is $1.1(1) \times 10^{-4}$ in conformance with rough theoretical expectations. Within the accuracy of the measurement, the delayed neutrons have the same spectrum as the prompt neutrons and display no time structure on the order of ~ 100 ms. While this measurement describes the delayed neutron production from a Tungsten spallation neutron target, it provides guidance for the expected delayed neutron production in other targets including the Mercury target at the Oak Ridge National Laboratory Spallation Neutron Source.

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