

Abstract Submitted
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Recent Advances in Resonance Region Nuclear Data Measurements and Analyses for Supporting Nuclear Energy Applications

MICHAEL DUNN, Oak Ridge National Laboratory — For over 30 years, the Oak Ridge National Laboratory (ORNL) has performed research and development to provide more accurate nuclear cross-section data in the resonance region. The ORNL Nuclear Data (ND) Program consists of four complementary areas of research: (1) cross-section measurements at the Oak Ridge Electron Linear Accelerator; (2) resonance analysis methods development with the SAMMY R-matrix analysis software; (3) cross-section evaluation development; and (4) cross-section processing methods development with the AMPX software system. The ND Program is tightly coupled with nuclear fuel cycle analyses and radiation transport methods development efforts at ORNL. Thus, nuclear data work is performed in concert with nuclear science and technology needs and requirements. Recent advances in each component of the ORNL ND Program have led to improvements in resonance region measurements, R-matrix analyses, cross-section evaluations, and processing capabilities that directly support radiation transport research and development. Of particular importance are the improvements in cross-section covariance data evaluation and processing capabilities. The benefit of these advances to nuclear science and technology research and development will be discussed during the symposium on Nuclear Physics Research Connections to Nuclear Energy.

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