^{56}Fe Resonance Evaluation Up to 1.5 MeV*

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Development of a new resonance evaluation of the ^{56}Fe cross sections up to 1.5 MeV is under way with the computer code SAMMY [1]. The new feature in this evaluation is the inclusion of the first inelastic level starting at 847 keV in the resonance analysis. The Reich-Moore formalism in the SAMMY code has been extended to include more channels beyond the usual elastic, capture, and fission channels. The evaluation work builds upon a previous evaluation performed by Perey et al. [2] up to 850 keV. New inelastic cross-section measurements from Geel and transmission data from Rensselaer Polytechnic Institute above 500 keV are also included in the evaluation. A preliminary set of resonance parameters and covariance data has been prepared for testing. The methodology used to evaluate the experimental data with the SAMMY code is presented at the workshop.

Reference:

1. N. M. Larson, *Updated Users' Guide for SAMMY: Multilevel R-Matrix Fits to Neutron Data Using Bayes' Equations*, ORNL/TM-9179/R7, Oak Ridge National Laboratory, Oak Ridge, Tenn., 2007.
2. C. M. Perey, F. G. Perey, J. A. Harvey, N. W. Hill, and N. M. Larson, *^{56}Fe Resonance Parameters for Neutron Energies up to 850 eV,* ORNL/TM-11742, Oak Ridge National Laboratory, Oak Ridge, Tenn., 1990.

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