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(Withdrawn) New Measurement of 165Ho Neutron Capture Cross Section Data

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The neutron capture cross section data for ^{165}Ho were measured at the Back-streaming White neutron beam line (Back-n) of China Spallation Neutron Source (CSNS) using total energy detection systems, which is comprise a set four C_6D_6 scintillator detectors coupled with pulse height weighting techniques.

The resonance parameters were extracted using the multilevel, multichannel R-matrix code SAMMY, fitting the measured capture yields of the ^{165}Ho(n,γ) reaction in the neutron energy range below 100 eV. Subsequently, the resonance region capture cross sections were reconstructed based on the obtained parameters. Additionally, the unresolved resonance average cross section of ^{165}Ho(n,γ) reaction was determined relative to the standard ^{197}Au sample within the neutron energy range of 2 keV to 1 MeV. The experimental data were compared with the recommended nuclear data from the ENDF/B-VIII.0 library, as well as TALYS-1.9 code calculations. The comparison indicates that the measured ^{165}Ho(n,γ) cross sections are in good agreements with these data. The present results are significant for evaluating the ^{165}Ho neutron capture cross section data, enhancing the quality of evaluated nuclear data libraries, and providing valuable guidance for nuclear theoretical models and nuclear astrophysical studies.

Primary authors: ZHANG, Suyalatu (IMUN); WANG, Dexin (IMUN); FAN, Ruirui (IHEP, CAS); JIANG, Wei (IHEP, CAS)

Presenter: ZHANG, Suyalatu (IMUN)

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