

Title: Photon strength functions in nucleus ^{160}Tb from the two-step γ cascades measurements

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Abstract: Photon strength functions have been a subject of a study for more than fifty years. A number of models was proposed to describe experimental data during that time. However, the correctness of these models is still very questionable and its verification is the subject of very intensive experimental and theoretical activity at the present time. In the present work the analysis of measurements of the two-step γ cascades following the slow neutron capture on the ^{159}Tb nucleus is used for study of photon strength functions. Results of the experimental data analysis are compared with the outputs of the Monte Carlo simulations based on the validity of so called Extreme Statistical Model. Comparison of experimental data with outcomes of simulations thus becomes the basic tool for studying correctness of theoretical models.

Keywords: Photon strength function, Energy level density, Extreme Statistical Model