

## PHOTOFISSION OF $^{238}\text{U}$ IN THE ENERGIES RANGE OF GIANT DIPOLE RESONANCE

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The yields and average cross sections of the photonuclear reactions  $^{238}\text{U}(\gamma, n)$  and  $^{238}\text{U}(\gamma, F)$  are measured at a maximum bremsstrahlung energy of 55 MeV. Based on the analysis of the residual activity spectra of the products of the  $^{238}\text{U}(\gamma, F)$  photofission reaction, the cumulative yields were measured for about 40 mass chains. The cross sections for the reactions  $^{238}\text{U}(\gamma, n)$  and  $^{238}\text{U}(\gamma, F)$  are estimated and compared with the results of experiments on quasi-monochromatic beams, estimated cross sections, and calculations using the TALYS program. The post-neutron mass yield distribution of  $^{238}\text{U}(\gamma, F)$  photofission has been obtained (fig. 1). The behavior of the symmetric and asymmetric modes of photofission is analyzed as a function of the average excitation energy of the fissile nucleus.

Fig. 1. Approximation by five Gaussian functions of the total mass distribution  $Y_M(A)$  of products formed as a result of  $^{238}\text{U}$  photofission induced by bremsstrahlung photons at an electron accelerator energy of 55 MeV.

### The speaker is a student or young scientist

Yes

### Section

1. Experimental and theoretical studies of nuclear reactions

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