Contribution ID: 366

Type: Oral talk (15 min + 5 min questions)

## PHOTOFISSION OF 238U IN THE ENERGIES RANGE OF GIANT DIPOLE RESONANCE

Tuesday, 12 July 2022 10:40 (20 minutes)

The yields and average cross sections of the photonuclear reactions  $^{238}U(\gamma,n)$  and  $^{238}U(\gamma,F)$  are measured at a maximum bremsstrahlung energy of 55 MeV. Based on the analysis of the residual activity spectra of the products of the  $^{238}U(\gamma,F)$  photofission reaction, the cumulative yields were measured for about 40 mass chains. The cross sections for the reactions  $^{238}U(\gamma,n)$  and  $^{238}U(\gamma,F)$  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  $^{238}U(\gamma,F)$  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  $^{238}U$  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

**Primary authors:** ALBAGHDADI, Omar; Mr KUZNETSOV, A (Lomonosov Moscow State University, Department of Physics); Mr BELYSHEV, S (Lomonosov Moscow State University, Department of Physics); Mrs IVANOVA, N (Lomonosov Moscow State University, Department of Physics); Mrs FURSOVA, N (Lomonosov Moscow State University, Department of Physics); Mr KHANKIN, V (Lomonosov Moscow State University, Department of Physics)

Presenter: ALBAGHDADI, Omar

Session Classification: Experimental and theoretical studies of nuclear reactions