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# DETERMINATION OF ISOBAR YIELDS FROM MASS DISTRIBUTION OF HEAVY FISSION PRODUCTS IN 239Pu(nth,f) REACTION

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Sets of fission yields have an impact on different fields of interest. From a theoretical standpoint they are interesting for the understanding of matter, because they allow the description of the phenomena occurring in a nucleus undergoing large collective motion at low excitation energy and, hence, are influenced by nuclear shells that disappear at higher excitation energies. From a practical standpoint fission yields are of importance for the design of nuclear reactors and for waste management.
The purpose of work was definition of independent yields - number of atoms of a specific nuclide produced directly (not via radioactive decay of precursors) in fission reactions. Measured heavy fission products distributions on ionic charges for 239Pu(nth,f) reaction are used for estimation of isobar composition [1]. The basic difficulty consisted in correct transition from measured ionic charges to charges of heavy fragments at the moment of nuclear fission. For this transition we used the modified expression from [2]. Isobar yields for the measured heavy fission products of 239Pu (nth, f) reactions are defined and compared with theoretical data [3].

1. G.A. Abdullaeva et al. // International Journal of Nuclear Energy Science and Engineering. 2013. V.3. I.3. P.72.
2. V.S. Nikolaev and I.S. Dmitriev // JTEP. 1964. V.47. P.615.
3. T.R. England, B.F. Rider // US report ENDF-349. 1994.

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