

TRUE QUATERNARY FISSION – CONFIRMATION FROM $^{235}\text{U}(n_{\text{th}}, f)$ REACTION

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In our previous publications [1, 2] we discussed possible physical scenario standing behind rectangular-like structures in the fission fragments mass-correlation distributions from $^{252}\text{Cf}(sf)$. The rectangle is bounded by the known magic nuclei such as ^{68}Ni , ^{84}Se and others. The fission events aggregated in the rectangle show extremely low total kinetic energies. Special cinematic analysis of the experimental observables allowed us to come to conclusion that the mother nucleus undergoes true quaternary fission. Such decay channel is observed for the first time. Similar fission events were observed as well in $^{235}\text{U}(n_{\text{th}}, f)$ reaction. Their properties are discussed in this report.

1. D.V.Kamanin *et al.* // Int. Symposium on Exotic Nuclei "EXON-2016", Kazan, Russia, 04–10 September 2016. Conference proceedings, Editors: Yu.E.Penionzhkevich, and Yu.G.Sobolev. Published by World Scientific Publishing Co. Pte. Ltd., 2017. P.243.
2. Yu.V.Pyatkov *et al.* // Journal of Physics: Conference Series. 2017. V.863. 012046.