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Light ions accompanied break-up of the medium heavy fission isomers

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In series of the photo-fission reactions, namely, 235, 238U(γ, f), 232Th(γ, f), 242Pu(γ, f) we have found that some part of the fission fragments (FFs) are presumably born in the state of the fission isomer with the yield Y ≈ 10−3/binary fission and with the lifetime τisom > 400 nsec [1, 2]. A binary break-up of such fragments was observed when they pass through a solid-state foil. The effect takes place also for the FFs from 252Cf(sf). In the proposed presentation we discuss also the mode of the break-up with forming light ions in the mass range (3-20) u as one of the resultant decay products. The link of such events with known polar emission of the light charged particles is analyzed.

References
1. D.V. Kamanin et al., Bulletin of the Russian Academy of Sciences: Physics, V. 87 (2023), p. 1238.
2. D.V. Kamanin et al., Journal of Physics: Conference Series, V. 2586 (2023) 012043.

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