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“Clusterization in heavy cold nuclei”

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A cluster is broadly understood to be an object which keeps its identity in a larger scale system. Manifestations of clustering can be revealed in very different size systems from exotic nuclei to galaxies. In our work we are searching for cluster effects in low energy fission of heavy nuclei. In the series of experiments carried out with the spectrometers based both on the gas filled (FOBOS spectrometer and its modifications) and mosaics of solid-state detectors (setups at the beams of alpha-particles and deuterons, COMETA spectrometer) in the frame of the “missing mass” approach and with the direct detection of three decay partners we discovered new type of the ternary decay of heavy nuclei called by us “collinear cluster tri-partition (CCT)”. The most interesting aspects of both the original methodic used and physics of the effect observed are discussed in the presented report.

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