

MANIFESTATION OF CLUSTER DEGREES OF FREEDOM IN FISSION FRAGMENTS AT CROSSING OF METAL FOILS

In our previous publications [1–3] we discussed new original effect appeared at crossing of the metal foils by fission fragments (FFs). We have observed significant mass deficit in the total mass M_s of the FFs detected in coincidence with the ions knocked out from the foil. In the series of recent, more detailed experiments we have compared the mass of the FF before (M_{tt}) and after (M_{te}) it passes the foil event by event. In the light of the obtained results, a FF from conventional binary fission is supposed to be born in the shape isomer state which looks like a di-nuclear system consisting of the a magic core and lighter cluster. Comparison of the correlation mass distributions M_{tt} - M_{te} for different metal foils is presented aimed at testing possible models of the effect.

Primary author: Mr STREKALOVSKY, Alexandr (JINR)

Track Classification: Experimental Nuclear Physics