

Estimation of reliability of linear point structures revealed in two-dimensional distributions of experimental data.

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In the experiments at the FOBOS spectrometer [H-G.Ortlepp, et al., NIM A 403 (1998) 65] dedicated to study of the spontaneous fission of the ^{248}Cm and ^{252}Cf nuclei in the mass correlation distribution of fission fragments new unusual structures bounded by magic clusters were observed for the first time. The structures were interpreted as a manifestation of a new exotic decay called collinear cluster tri-partition (CCT). These pioneer results were confirmed and detailed later in the series of experiments at different time-of-flight spectrometers [D.V. Kamanin, Yu. V. Pyatkov, "Clusters in Nuclei - Vol.3" ed. by C. Beck, Lecture Notes in Physics 875, pp. 183-246 (2013)]. Interpretation of the results obtained needs estimation of the statistical reliability of the structures mentioned above. The report presents the results of the solution of the problem of estimation of statistical reliability of linear point structures on the basis of methods of morphological image analysis [Pyt'ev Yu.P. Morphological Image Analysis. — Pattern Recognition and Image Analysis. V.3. No 1. 1993, pp. 19-28.].

Presentation type

Section talk (10+5 min)

Primary author(s) : Dr. FALOMKINA, Olesya (Lomonosov MSU); Prof. PYATKOV, Yuri (Mephi)

Co-author(s) : Dr. KAMANIN, Dmitry (JINR); Prof. PYT'EV, Yuri (Lomonosov MSU)

Presenter(s) : Dr. FALOMKINA, Olesya (Lomonosov MSU)

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