Method for processing and analysis of homogeneity of large sets of small-volume samples of low-intensity radiation streams.

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A method for processing and analyzing sequences of samples of variation series of values of identifiers of random vectors (RV) - for their corresponding samples of small volume of counts of registered particles was proposed. The identifier is a functional in the form of a scalar product RV of frequencies of values of counts in the sample

where – is not a randomly given vector. For a given number of vectors the frequency distribution of values represents sequences of ordered groups of peaks formed by:

1. similar in components RV
2. of homogeneous peaks formed by homogeneous RVs.

To evaluate the homogeneity of RV and peaks, it was proposed a test statistic and a criterion of agreement based on the metric

It was shown that the homogeneity estimation of peaks considered also as random vectors and can be performed by the degree of their collinearity where -is the angle between vectors and equality of modules.

The proposed method allows identifying combinatorial types of RV, predicting frequencies of their realization and peaks formed by them - also random vectors with

The method is effective at average

References

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