Estimation of the degree of agreement of empirical random vectors using central moment functions.

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A methodology for estimating the degree of agreement of empirical random vectors (RV): of frequencies of counts of registered particles by samples of small volume

and average was developed.

The degree of agreement of the vectors is estimated by the test statistics of the closeness of the projections of the fractional order functions of the central moments RV– :

Where and is real and imaginary components of the central moments function . As a test statistic to estimate the agreement of projections there was proposed a metric

The methodology is based on the mutual one-to-one correspondence of the random vector in the sample and the complex function of fractional order of central moment of vector .

References

1. Bliznyakov N. M., Vakhtel V. M., Kostomakha D. E., Rabotkin V. A., "Modern methods of the theory of functions and related problems", Proceedings of an international conference, Voronezh: -VSU. 2021. p. 55-57.