ICSE085

PRESENTATION OF THE GUIDES ON APPLICATION OF NONPARAMETRIC GOODNESS-OF-FIT TESTS AND NORMALITY TESTS

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Abstract

The problems of the application of non-parametric goodness-of-fit tests (Kolmogorov, Kuiper, Cramer-von Mises-Smirnov, Watson, Anderson-Darling, Zhang tests) for testing simple and composite hypotheses are considered in this paper. A comparative analysis of these tests in terms of the power has been carried out. The tables of percentage points and models approximating the limiting distributions of considering test statistics for composite hypotheses have been constructed. The usage of these models enables to apply correctly the nonparametric goodness-of-fit tests for various composite hypotheses.

The problems of the application of statistical tests, directed at testing the hypothesis of normal distribution law, are discussed. The comparison of special normality tests, nonparametric goodness-of-fit tests and chi-squared type goodness-of-fit tests is presented. The advantages and disadvantages of considered tests are listed.

The guide on the application on nonparametric goodness-of-fit tests and the guide on the application of the normality tests have been developed. The guides will be useful for engineers, scientists, specialists in various fields, who face in their activities with the need of the statistical analysis of experimental results.

Keywords: *Kolmogorov test, Kuiper test, Cramer-von Mises-Smirnov test, Watson test, Anderson-Darling test, Zhang test, normality tests*