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Kernel-Based Goodness-of-Fit Tests for Univariate Models

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Abstract

In this talk, we introduce a new class of goodness-of-fit tests based on kernel density estimation (KDE) for univariate data. The proposed statistics compare a parametric null model with a nonparametric KDE-based estimator under the alternative hypothesis. Theoretical analysis establishes the consistency of the tests and shows that, under fixed alternatives, the statistics converge to the Kullback–Leibler divergence. Simulation studies and real-data examples confirm the strong empirical power of the proposed tests.

References

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