

On characterization based approach for construction of goodness-of-fit tests

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Recently, a characterization based approach for the construction of goodness-of-fit tests has become rather popular. Such tests are attractive because they reflect some intrinsic properties of probability distributions. Consequently, they are usually more powerful and more efficient than classical competitors. The growth of the number of characterization theorems especially contributed to the development of this direction.

In this talk, we present several types of characterization theorems as well as several approaches for the construction of goodness-of-fit tests. General approaches will be accompanied by particular examples of recently proposed tests for Exponential, Pareto, Uniform and Levy distribution. A part of the talk will be dedicated to the brief review of theoretical results about U - and V -statistics which are essential for the derivation of asymptotic properties of presented tests.

The presentation will be based on the references given below, as well as some working results.

References

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- [6] B. Milošević. Asymptotic efficiency of goodness-of-fit tests based on Too–Lin characterization. *Communications in Statistics-Simulation and Computation*, 49(8):2082–2101, 2020.
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