Characterizations of probability distributions, goodness of fit tests and Bahadur asymptotic efficiency

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First characterizations of probability distributions date to the thirties of last century. This area attracts large number of researchers, and in recent times the number of papers on the subject is increasing. Goodness of fit tests occupy a significant part of nonparametric statistic. Most of classical tests are based on the distance between the assumed distribution function and its consistent estimate, empirical distribution function. The application of characterization theorems for construction of goodness of fit tests dates to the middle of last century, and recently has become one of the main directions in this field. The advantage of such tests is that they are often free of distribution parameters or distribution free and enable testing of composite hypotheses. Bahadar asymptotic efficiency is a tool for comparing statistical tests. All tests are compared using asymptotic Bahadur efficiency. The talk is based on joint results with Marko Obradović.