Precedence-type Tests Based on Kaplan-Meier Estimate of CDF

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In this talk, I will first present a brief introduction to precedence test for reliability and some of its alternatives. Then, I will introduce the Kaplan-Meier product estimator of the survival function (or the cumulative distribution function) based on Type-II censored and progressively Type-II censored samples. I will then use this estimator to propose a precedence-type test statistic and discuss the enumerative procedure for the exact computation of its exact null distribution and the critical values for the conventional Type-II censored samples. Next, I will describe the test statistic and the derivation of its exact null distribution in the case of progressive Type-II censoring. I will then consider the Lehmann alternative and derive the exact power function of the test procedures in these situations. Finally, some simulational results in the case of location-shift alternatives will be presented along with some numerical examples to illustrate all the test procedures proposed here.