Multi-Sample Rank Tests for Location against Ordered Alternatives

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The talk will be concerned with family of rank tests for the multi-sample hypothesis testing problem. The proposed test statistics are based on the number of observations from one sample that precede or exceed a threshold specified by the other samples. We discuss here distribution properties of such type tests statistics and consistency of the tests against specific ordered alternatives. We will consider an extension of a Lehmann alternative for the two-sample location problem appropriate to the multi-sample problem which leads to a distribution free test under the alternative.