

Precedence-type testing and applications

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SUMMARY

In this course, I will first start with an introduction to the concept of precedence testing and explain its features including the derivation of the exact null distribution and its power function against Lehmann alternatives. I will show that this test, though simple and quite effective, suffers from a "masking effect" and to avoid this problem, I will propose maximal precedence test and weighted precedence test. I will then introduce Wilcoxon-type precedence tests and discuss their null and power properties for a wide class of alternatives.

As the next stage, I will discuss the adaptation of precedence tests when the available samples are progressively censored. I will explain how precedence tests can be developed based on Kaplan-Meier estimates and evaluate their power performance.

Finally, if time permits, I shall explain the precedence testing in the case of multiple samples as well as their use in the selection of best treatments when multiple treatments are compared.

Through out the presentation, I will present several computational results as well as illustrative examples.

Keywords: Precedence testing, power function, progressive censoring

AMS Classification: 62N03, 62N01

References

- [1] BALAKRISHNAN, N. AND TONY NG, H. K. (2006). *Precedence-type tests and applications*. Wiley, Hoboken, New Jersey.

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