

ROBUST M-TESTS

by

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Abstract

This paper investigates the local robustness properties of a general class of multi-dimensional tests based on M-estimators. These tests are shown to inherit the efficiency and robustness properties of the estimators on which they are based. In particular, it is shown that small perturbations of the distribution of the observations can have arbitrarily large effects on the asymptotic level and power of tests based on estimators that do not possess a bounded influence function. An asymptotic 'admissibility' result is also presented, that provides a justification for tests based on optimal bounded-influence estimators.

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