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Minimum Disparity Inference Based on Tangent Disparities

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Abstract

This paper introduces the new family of ``tangent disparities" based on the tangent function and considers robust inference based on it. The properties of the resulting inference procedures are studied. The estimators are asymptotically efficient with asymptotic breakdown points of 1/2 at the model. The corresponding tests are equivalent to the likelihood ratio test under the null. Numerical studies substantiate the theory developed and compare the performance of the methods with those based on the Hellinger distance.

Keywords: Tangent disparity, efficiency, breakdown point, robustness, residual adjustment function.