

Title:

Another Calculation of the p -Value for the Problem of Regions Using the Scaled Bootstrap Resamplings

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Abstract:

An approximately unbiased test is considered for the null hypothesis represented as a region with smooth boundaries. This problem is discussed previously in Efron and Tibshirani (1998), and our argument is based on their results. We give another calculation of the corrected p -value without findings the "nearest point" on the boundary to the observation, which is required in the calculation of Efron, Halloran and Holmes (1996). We generate sets of bootstrap replicates with several sample sizes which may differ from that of the observed data. For each set of replicates, the frequency that the replicates fall in the region is counted. Only these frequencies are used to estimate the signed distance and the curvature of the boundary in the calculation of the p -value. Our calculation will be useful for applications with correlated data structure where complicated bootstrap methods are used.