

Ratio Type Statistics for Detection of Changes in Mean and the Block Bootstrap Method

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We present procedures for detection of changes in mean. In particular test procedures based on ratio type test statistics that are functionals of partial sums of residuals are studied. The possibility of applying the bootstrap method for obtaining critical values of the proposed test statistics is explored and the limit behavior of the block bootstrap statistic for the L_2 procedure is derived. The results are illustrated through a simulation study.

References

- [1] Horváth, L., Horváth, Z., and Huřková, M. (2008). *Ratio tests for change point detection*. Beyond Parametrics in Interdisciplinary Research: Festschrift in Honor of Professor P. K. Sen, **1**:293–304.
- [2] Huřková, M. (2007). *Ratio type test statistics for detection of changes in time series*. Bulletin of the International Statistical Institute, Proceedings of the 56th Session, Lisboa 2007, (976).
- [3] Kirch, C. (2006). Resampling Methods for the Change Analysis of Dependent Data. PhD thesis, University of Cologne, Cologne. <http://kups.ub.uni-koeln.de/volltexte/2006/1795/>.+
- [4] Madurkayová, B. (2011). *Ratio Type Statistics for Detection of Changes in Mean and the Bootstrap Method*. Acta Universitatis Carolinae: Mathematica et Physica, **52**(1):47–58.