

Darling–Erdős limit results for change-point detection in panel data

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We assume that we have N panels and each panel is based on T observations. It is assumed that the panels are independent but the panels maybe based on dependent observations. We would like to test the null hypothesis that the means remain the same in the panels during the observation period against the alternative that the means may have changed in some of the panels. Using quasi likelihood ratio arguments the best test is based on self-normalized CUSUM statistics. We provide the limit distribution of the proposed statistic under the null hypothesis and provide a small simulation study in the case of small and moderate sample sizes.

This is joint research with Lajos Horváth (University of Utah) and Marie Hušková (Charles University, Prague).