Asymptotics of the Empirical Cross-over Function

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Abstract We consider a combination of heavily trimmed sums and sample quantiles which arises when examining properties of clustering criteria and prove limit theorems. The object of interest, which we call the Empirical Cross-over Function, is an L-statistic whose weights do not comply with the requisite regularity conditions for usage of existing limit results. The law of large numbers, CLT and a functional CLT are proven.