# ADAPTIVE CHOICE OF TRIMMING PROPORTIONS

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**Abstract.** We consider Jaeckel's (1971, *Ann. Math. Statist.*, **42**, 1540–1552) proposal for choosing the trimming proportion of the trimmed mean in the more general context of choosing a trimming proportion for a trimmed $L$-estimator of location. We obtain higher order expansions which enable us to evaluate the effect of the estimated trimming proportion on the adaptive estimator. We find that $L$-estimators with smooth weight functions are to be preferred to those with discontinuous weight functions (such as the trimmed mean) because the effect of the estimated trimming proportion on the estimator is of order $n^{-1}$ rather than $n^{-3/4}$. In particular, we find that valid inferences can be based on a particular "smooth" trimmed mean with its asymptotic standard error and the Student $t$ distribution with degrees of freedom given by the Tukey and McLaughlin (1963, *Sankhyā Ser. A*, **25**, 331–352) proposal.

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