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## Edgeworth Expansions of Some Statistics Including the LB-statistic and V-statistic

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**Abstract:** As an estimator of an estimable parameter, Toda and Yamato (2001) introduced a linear combination  $Y_n$  of U-statistics which includes V-statistic and LB-statistic.

We give the Edgeworth expansions of the standardized  $Y_n$  statistic with remainder  $o(n^{-1})$  in case that the kernel is not degenerate. We also give the Edgeworth expansions of the studentized  $Y_n$  statistic using a jackknife variance estimator with remainder  $o(n^{-1/2})$ .

**Key words:** Edgeworth expansion, linear combination of U-statistics, V-statistic

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