Asymptotic estimates for the remainder term of averaged Gaussian rules

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Abstract

This work deals with an asymptotic error analysis of the error terms of the averaged and generalized averagd Gaussian rules ([1], [2]), in the case of the classical weight functions, by exploiting the Cauchy integral representation of the remainders. In particular, by working with the kernels that characterize these integral representations, it is possible to asymptotically relate the kernels of the averaged Gaussian rules with the one corresponding to the Guassian formula. The final error estimates allow to asymptotically quantify the speed up of this kind of quadrature rules with respect to the underlying Gaussian quadratures.

Keywords: Averaged Gaussian rules, Asymptotic error estimates

References

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