

Gautschi, Walter; Varga, Richard S.

Error bounds for Gaussian quadrature of analytic functions. (English) Zbl 0545.41040
SIAM J. Numer. Anal. 20, 1170-1186 (1983).

The authors consider Gaussian quadrature rules for finite positive measures defined on compact real intervals. They are applied to analytic functions in certain domains that contain the interval in their interior. They develop error bounds from circular or elliptic contour integral representations. In particular, for a class of measures that contains the Jacobi measure, they determine where the kernel of the circular contour integral representation attains its maximum modulus. The authors also present some empirical results and numerical examples.

Reviewer: [M.A.Jimenez](#)

MSC:

[41A55](#) Approximate quadratures
[41A21](#) Padé approximation
[41A10](#) Approximation by polynomials
[41A50](#) Best approximation, Chebyshev systems

Cited in **4** Reviews
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Keywords:

Gaussian quadrature rules; error bounds; circular contour integral representation; maximum modulus; results; numerical examples

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