

ABSTRACT

We consider the Gauss quadrature formulae corresponding to some modifications of anyone of the four Chebyshev weights, considered by Gautschi and Li. As it is well known, in the case of analytic integrands, the error of these quadrature formulas can be represented as a contour integral with a complex kernel. We study the kernel, as it is often considered, on elliptic contours with foci at the points ∓ 1 and such that the sum of semi-axes is $\rho > 1$, of the mentioned quadrature formulas, and derive some error bounds for them. In addition, we obtain, for the first time as far as we know, a result about the behavior of the modulus of the corresponding kernels on those ellipses in some cases. Numerical examples checking the accuracy of such error bounds are included.