TRIGONOMETRIC GAUSSIAN QUADRATURE ON SUBINTERVALS OF THE PERIOD[*]

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Abstract. We construct a quadrature formula with $n + 1$ angles and positive weights which is exact in the $(2n + 1)$-dimensional space of trigonometric polynomials of degree $\leq n$ on intervals with length smaller than 2π. We apply the formula to the construction of product Gaussian quadrature rules on circular sectors, zones, segments, and lenses.

Key words. trigonometric Gaussian quadrature, subintervals of the period, product Gaussian quadrature, circular sectors, circular zones, circular segments, circular lenses

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