

The set of anti-Gaussian quadrature rules for the optimal set of quadrature rules for trigonometric polynomials

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Abstract. It is well known that the anti-Gaussian quadrature rule, introduced by Laurie in 1996 ([1]), gives the error equal in magnitude but of opposite sign to the error of the corresponding Gaussian quadrature rule. Here, we define a set of anti-Gaussian quadrature rules for the optimal set of quadrature rules in Borges' sense in the linear space of trigonometric polynomials ([2], [3]). We consider the orthogonality with respect to the set of r different weight functions, with special attention to even weight functions. Also, we investigate the corresponding class of trigonometric multiple orthogonal polynomials and prove some of their important properties.

Keywords: anti-Gaussian quadrature rule; multiple orthogonal polynomials; trigonometric orthogonality.

References

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