

# Anti-Gaussian quadrature rule for trigonometric polynomials

Nevena Petrović<sup>1</sup>, Tatjana Tomović<sup>1</sup>, and Marija Stanić<sup>1</sup>

<sup>1</sup>Department of Mathematics and Informatics, Faculty of Science, University of Kragujevac,  
nenap@kg.ac.rs, tomovict@kg.ac.rs, stanicm@kg.ac.rs

An anti-Gaussian quadrature formula is an  $(n + 1)$ -point formula with algebraic degree of exactness  $2n + 1$ . Its error is equal in magnitude but of opposite sign to that of the  $n$ -point Gaussian formula. In this paper, we investigate an anti-Gaussian quadrature rule with maximal trigonometric degree of exactness with respect to an even weight function on  $[-\pi, \pi)$ . Also, we give the method for its construction based on relations between nodes and weights of the quadrature rule for trigonometric polynomials and those of the quadrature rule for algebraic polynomials which were given in [1].

## References

- [1] G. V. Milovanović, A. S. Cvetković and M. P. Stanić, Trigonometric orthogonal systems and quadrature formulae, *Comput. Math. Appl.* **56** (2008), 2915–2931.
- [2] D. P. Laurie, Anti-Gaussian quadrature formulas, *Math. Comp.* **65**(214) (1996), 739–747.