

# SOME NEW CLASS OF MULTIPLE ORTHOGONAL POLYNOMIALS

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Multiple orthogonal polynomials are a generalization of orthogonal polynomials in the sense that they satisfy orthogonality conditions with respect to  $r \in N$  different weight functions simultaneously. Here, we present multiple orthogonal polynomials that satisfy orthogonality conditions with respect to the set of  $r$  bilinear forms defined on the linear space of algebraic polynomials [1], as well as on the linear space of trigonometric polynomials, with special attention to even weight functions. These bilinear forms naturally arise in the construction of sets of anti-Gaussian quadrature rules for the optimal sets of quadrature rules in Borges' sense on the mentioned spaces.

## References

- [1] N. Z. Petrović, M. S. Pranić, M. P. Stanić, T. V. Tomović Mladenović, *The set of anti-Gaussian quadrature rules for the optimal set of quadrature rules in Borges' sense*, J. Comput. Appl. Math., 442 (2024), pp. 115733