

**A LINEAR CONSTRUCTIVE APPROXIMATION FOR INTEGRABLE
FUNCTIONS AND A PARAMETRIC QUADRATURE MODEL BASED ON A
GENERALIZATION OF OSTROWSKI-GRÜSS TYPE INEQUALITIES***

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Abstract. A new generalization of Ostrowski-Grüss type inequalities, depending on a parameter λ , is introduced in order to construct a specific linear approximation for integrable functions. Some important subclasses of this inequality such as $\lambda = 1/2, 1$, and $\sqrt{2}/2$ are studied separately. The generalized inequality is employed to establish a parametric quadrature model and obtain its error bounds.

Key words. Ostrowski-Grüss type inequalities, linear constructive approximation, numerical quadrature rules, Chebyshev functional, kernel function.

AMS subject classifications. 26D15, 65D30, 26D20, 65D32.

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