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SEQUENCES OF ERRORS WITH BOUNDARY LAYER IN SPACES OF UNIVARIATE FUNCTIONS WITH FRACTIONAL RIEMANN–LIOUVILLE DERIVATIVES

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We study the asymptotics of errors for complicated quadrature formulas and formulas with boundary layer on functions with fractional Riemann–Liouville derivatives summable to some power. It is shown that the formulas under consideration are asymptotically best with respect to the rate of convergence among formulas with arbitrary nodes and weights. The results are illustrated by the examples of trapezoidal and rectangle rules.

Key words and phrases: quadrature formula, fractional derivative, error.

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