

ON ERROR BOUNDS OF GAUSS–TURÁN QUADRATURES FOR ANALYTIC FUNCTIONS: A SURVEY

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We consider the generalized Gauss–Turán quadrature formulae

$$Q_{n,s}(f) := \sum_{\nu=1}^n \sum_{i=0}^{2s} A_{i,\nu} f^{(i)}(\tau_{\nu}) + R_{n,s}(f) \quad (n \in \mathbb{N}; s \in \mathbb{N}_0)$$

for approximating $\int_{-1}^1 f(t)w(t) dt$. The aim is to analyze the remainder term $R_{n,s}(f)$ in the case when f is an analytic function in some region of the complex plane containing the interval $[-1, 1]$ in its interior. A survey of the obtained results will be presented.

AMS Subject Classification: primary A55; secondary 65D30, 65D32

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CRITICAL ANALYSIS OF RUNGE'S ESTIMATION OF ERRORS AND RUNGE'S CORRECTION OF APPROXIMATED VALUES OF INTEGRALS

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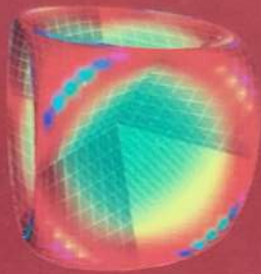
In this article is investigate under witch conditions the using of Runge's estimation of the error and Runge's correction of the last approximation by numerical calculation of an integral is justified.

AMS Subject Classification: 66G99 Error analysis and interval analysis

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