

A MIXED QUADRATURE RULE OF GAUSS-LEGENDRE-4 POINT TRANSFORMED RULE AND SM₂(f) RULE FOR NUMERICAL INTEGRATION OF ANALYTIC FUNCTIONS

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Abstract

A quadrature rule of higher precision has been constructed mixing two quadrature rules of lower precision for approximate evaluation of the integral of an analytic function over a line segment in complex plane. An asymptotic error estimate of the rule has been determined and the rule has been numerically verified.

Key Words: Quadrature rule, Asymptotic error, Analytic function, Numerical integration, Gauss-Legendre, Birkho-Young rule, SM₂(f); SM₅(f); ESM₂; ESM₅.

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