A quadrature formula for the approximation of Cauchy type singular integrals on the interval

ABSTRACT

The paper deals with the construction of an efficient quadrature formula for singular integrals (SI) of Cauchy type. The construction of quadrature formula is based on modification of discrete vortex method and interpolation linear spline. The estimations of errors are obtained in the classes of $H\alpha([-1,1],K)$ and$C1([-1,1])$. Numerical analysis arealso given.

Keyword: Singular integral; Quadrature formula; Canonic partition; Discrete vortex method; Approximation; Spline function