

Bul. St. Univ. Baia Mare
Seria B, Matematică-Informatică, Vol. VII, Nr. 1-2, 109-114

SOME SPLINE APPROXIMATION BASED ON GENERALIZED
GAUSS-TYPE QUADRATURE FORMULAS

PETRU BLAGA

Summary. One considers the problem of approximating a given function f on $[0,1]$ by a spline function of fixed degree with variable knots. The deficiencies of this spline function are greater or equal than one. The spline approximation is constructed in such a way that it interpolates the value of the function f and some of its derivatives at the end right point of the interval $[0,1]$, and it preserves some moments of the function. The particular case when the deficiency is one in all knots was considered in [3]. As in particular case, the solution of our problem will be obtained by some generalized Gauss quadrature formulas. The elements of the spline approximation are given by the coefficients and the nodes of these quadratures. When the spline approximation exists the error term in spline approximation formula is expressed by the error term from the corresponding quadratures.