

METHODS OF INTERPOLATION OF THE DEFINITE CLASS OF
NON-LINEAR FUNCTIONS WITH PRACTICAL EXAMPLES

K. J. Kachiashvili, D. Yu. Melikdzhanian

I. Vekua Institute of Applied Mathematics
Tbilisi State University
0143 University Street 2, Tbilisi, Georgia

(Received: 12.08.05; accepted: 17.12.05)

Abstract

In the paper there are considered one-parameter families of functions from polynomials and a set of non-linear functions of real variables depended on many parameters. A general method of determination of unknown parameters values for both equidistant and non-equidistant values of argument is offered. The method allows to reduce the interpolation task to solving of system of non linear equations (consisted of one or two equations) and finding the initial approximations for roots of these equations, for which the monotonous convergence of the iteration sequence to the unknown root of the system is guaranteed.

Key words and phrases: non-linear function; interpolation; system of equations; initial approximation; iteration method.