

AUTOMATIC TIME STEP SELECTION FOR NUMERICAL SOLUTION OF NEUTRON DIFFUSION PROBLEMS

Aleksandr Vasilev
North-Eastern Federal University

An automatic algorithm of time step control for solving the boundary value problems for nonstationary parabolic equations is presented. The solution is obtained using complete stable implicit schemes, and the time step is evaluated using of the explicit scheme solution. The time step evaluation formulas are derived using the estimation of the approximation error at next time step. Calculation results obtained for several neutron diffusion problems demonstrate reliability of the proposed algorithm for time step control.