THE NUMERICAL SOLUTION OF THE HEAT DIFFUSION EQUATION VIA LATTICE BOLTZMANN METHOD

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ABSTRACT. The implementation of the lattice Boltzmann method (LBM) for the solution of the heat diffusion problem is presented. The two dimensional task is considered and the different boundary conditions, specifically the Dirichlet and Neumann are taken into account. The D2Q4 lattice model is applied. To check the accuracy of the LBM algorithm, the same problems have been solved using the explicit variant of the finite difference method. In the final part of the paper, the results of computations are shown and the conclusions are formulated.

KEYWORDS: *lattice Boltzmann method, numerical solution, diffusion equation*