

Convergence of a mono-dimensional lattice Boltzmann scheme with two velocities

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In this contribution, we consider a nonlinear scalar conservation law. We use the D1Q2 scheme to approach this equation, as in [2, 3]. We analyse the method and propose a link with the relaxation method proposed by Jin and Xin [4], used in one of our works in the context of finite volumes [1]. When the relaxation parameter of the lattice Boltzmann method is between 0 and 1, we prove the convergence of the scheme towards the unique entropy solution of the hyperbolic equation when the mesh size tends to zero.

References

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