

## A Lattice Boltzmann Model and Simulation of KdV-Burgers Equation

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Abstract: A lattice Boltzmann model of KdV-Burgers equation is derived by using the single-relaxation form of the lattice Boltzmann equation. With the present model, we simulate the traveling-wave solutions, the solitary-wave solutions, and the sock-wave solutions of KdV-Burgers equation, and calculate the decay factor and the wavelength of the sock-wave solution, which has exponential decay. The numerical results agree with the analytical solutions quite well.

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Key words: KdV-Burgers equation, lattice Boltzmann model, traveling-wave solution, solitary-wave solution, sock-wave solution

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