Convergence and error estimates for a conservative spectral method for the homogeneous Boltzmann equation

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Résumé

We develop error estimates for a semi-discrete conservative spectral method for the Boltzmann equation in L2 and Sobolev spaces. We prove that the conservation laws are, in some sense, more important than positivity of the solution in order to have accurate simulations for large times. Convergence of the numerical approximation to the Maxwellian equilibrium is also proved.

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