

Numerical analysis of the BGK model with external confining potential

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Abstract

The aim of this paper is to describe numerically the behavior of the BGK model [1] with external confining potential. We analyze the steady states of this model. In the non linear BGK model these states are a family of periodic Maxwellians on time, as in the case of the original Boltzmann equation [4]. Our numerical study shows that all these Maxwellians are asymptotically stable and we can obtain the rate of convergence in terms of the entropy functional. With the numerical study presented in this work we complete the analysis developed in [3], for the linear case, and [2], for the non linear case.

References

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