

Quantum BGK model near a global Fermi-Dirac distribution

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ABSTRACT

Quantum kinetic BGK equation is a relaxation model of quantum Boltzmann equation describing dynamics of fermion gases. Two results for fermionic quantum BGK model are considered in this presentation. First, we prove the existence of parameter of local quantum Fermi-Dirac Maxwellian when conservation laws are satisfied. Second, global existence and asymptotic behavior of fermionic quantum BGK equation are considered under the assumption that initial data is near a global Maxwellian. In order to prove the main theorem, coercivity property and nonlinear energy method are crucially used.

REFERENCES

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