FIGURE 1. Viscous drag force on the sphere in the free molecular regime as function of the tangential momentum accommodation coefficient. Green lines correspond to the results presented by Chernyak & Sograbi (2019). Red lines correspond to the present results.
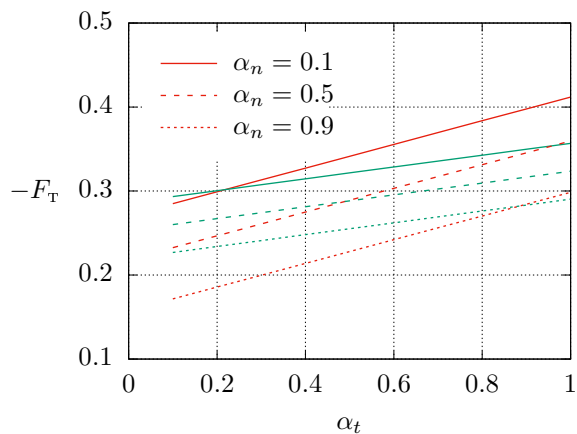

FIGURE 2. Thermophoretic force on the sphere in the free molecular regime as function of the tangential momentum accommodation coefficient. Green lines correspond to the results presented by Chernyak & Sograbi (2019). Red lines correspond to the present results.
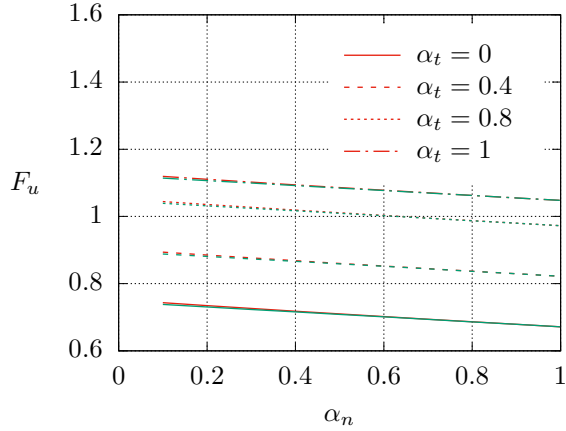
FIGURE 3. Viscous drag force on the sphere in the free molecular regime as function of the normal energy accommodation coefficient. Green lines correspond to the results presented by Chernyak & Sograbi (2019). Red lines correspond to the present results.
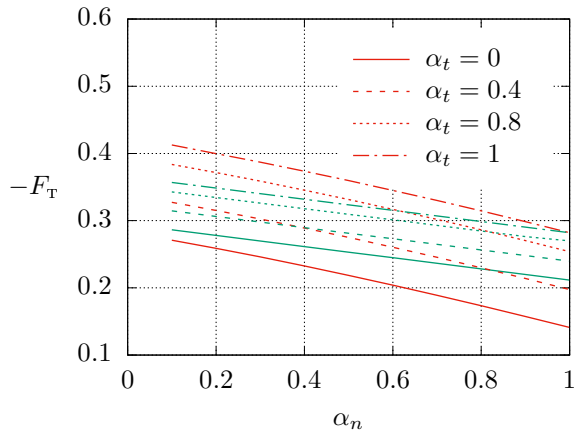

FIGURE 4. Thermophoretic force on the sphere in the free molecular regime as function of the normal energy accommodation coefficient. Green lines correspond to the results presented by Chernyak & Sograbi (2019). Red lines correspond to the present results.
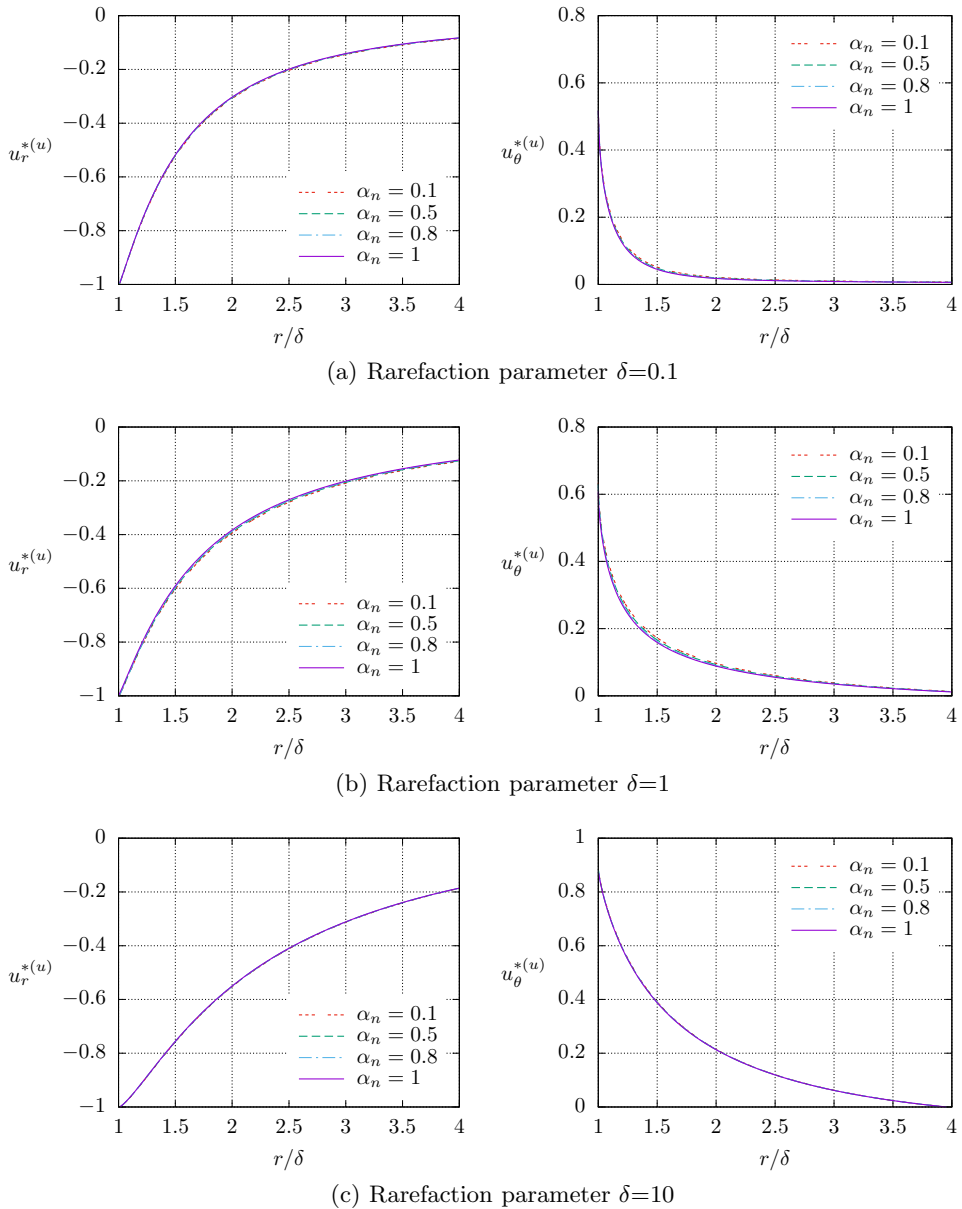
(a) Rarefaction parameter δ=0.1

(b) Rarefaction parameter δ=1

(c) Rarefaction parameter δ=10

FIGURE 5. Components of the bulk velocity as functions of the radial distance from the sphere due to the thermodynamic force X_u for fixed α_t=1.

(a) Rarefaction parameter δ=0.1

(b) Rarefaction parameter δ=1

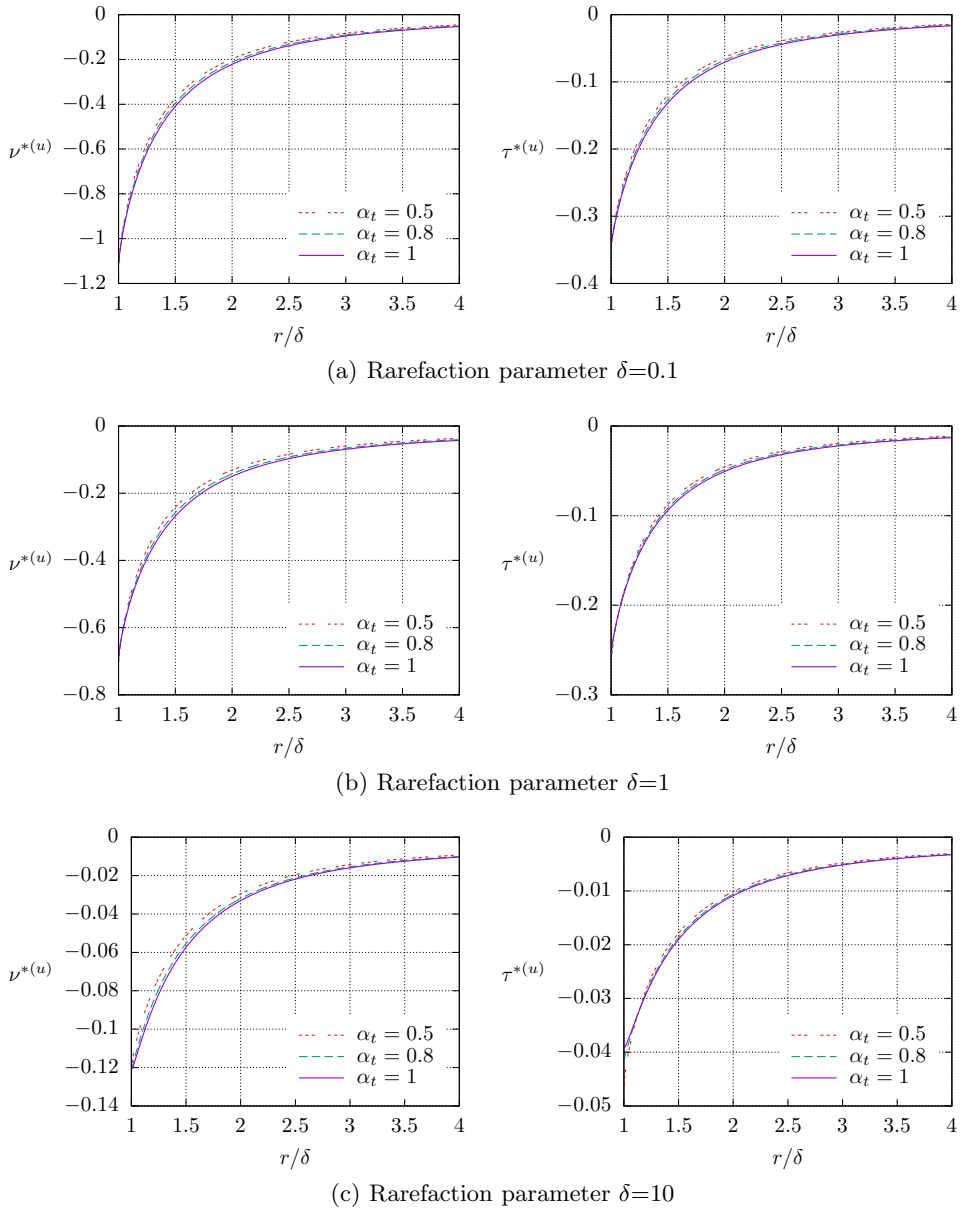
(c) Rarefaction parameter δ=10

FIGURE 6. Density and temperature deviations as functions of the radial distance from the sphere due to the thermodynamic force X_u for fixed α_n=0.1.

REFERENCES

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