

## **A Closure for Grad's 13 Moment Equations Using a Hermite Polynomial Representation of Velocity Distribution Function**

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We suggest a new closure for Grad's thirteen moment equations for medium rarefied gases by using a Hermite polynomial approximation for the monatomic gas velocity distribution function, and applying the Chapman-Enskog regularization method to Grad's velocity distribution function that corresponds to his thirteen moment equation. In this closure the collision term of the Boltzmann equation is assumed to be in the Bhatnagar-Gross-Krook (BGK) form. The velocity distribution function for resulting 13 regularized moment equations is presented.