

Body motion in a resistive medium at temperature T

Molina,

We consider a macroscopic body propagating in a one-dimensional resistive medium, consisting of an ideal gas at temperature T . For a whole family of collisions with varying degree of inelasticity, we find an exact expression for the effective force on the moving body as a function of the body's speed and the value of the restitution coefficient. At low and high speeds it reduces to the well-known Stoke's and Newton's law, respectively.