

## CHAPTER OVERVIEW

### 22: Resistive Forces in Fluids

In the last chapter we examined the frictional force between solid bodies in direct contact. Another type of resistive force applies to objects moving through a fluid <sup>1</sup> such as air. In such a situation, the resistive force  $F_R$  is generally found to be proportional to some power of the velocity  $v$  of the body:

$$F_R \propto v^n \quad (22.1)$$

We'll examine two common models of this resistive force: one where  $n = 1$ , and another where  $n = 2$ . Examples with  $n = 1$  include flow through fine fibrous mats such as furnace filters, and the movement of fog, mist, and dust particles through the atmosphere. Examples with  $n = 2$  include most falling objects, parachute flight, and aerodynamic drag on automobiles.

[22.1: Model I  \$F \propto v\$](#)

[22.2: Model II-  \$F \propto v^2\$](#)

---

<sup>1</sup> A fluid is a substance that flows (a gas or a liquid).

---

22: Resistive Forces in Fluids is shared under a [CC BY-NC-SA 4.0](#) license and was authored, remixed, and/or curated by LibreTexts.