Transport Phenomena

- Three topics:
  - fluid dynamics,
  - heat transfer, and
  - mass transfer
- Important properties that are measured/described are the mass, momentum, energy, and angular momentum.
- Three levels at which it can be studied:
  - macroscopic level
    - equations for these are 'macroscopic balances'
    - no effort is made to understand the details of the system
    - the aim is to make a global assessment of the system
  - microscopic level
    - equations for these are 'equations of change'
    - how properties change within a small region
    - the aim is to get information about velocity, temperature, pressure, and concentration profiles within the system
  - molecular level
    - the aim is to understand the mechanisms of the properties in terms of molecular structure and intermolecular forces

$$PV = nRT$$

$$hello$$

Collision of two different diatomic molecules that are homonuclear

References

- Transport Phenomena 2nd Edition Bird, Stewart, & Lightfoot