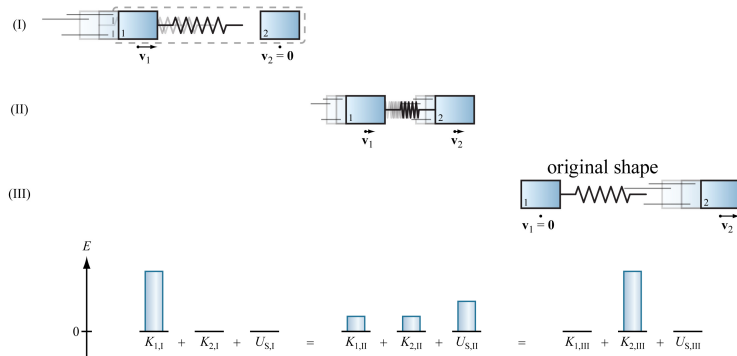# Types of collisions

## Elastic



Even though some of the kinetic energy of the system might be temporarily transformed into other forms during the collision process,
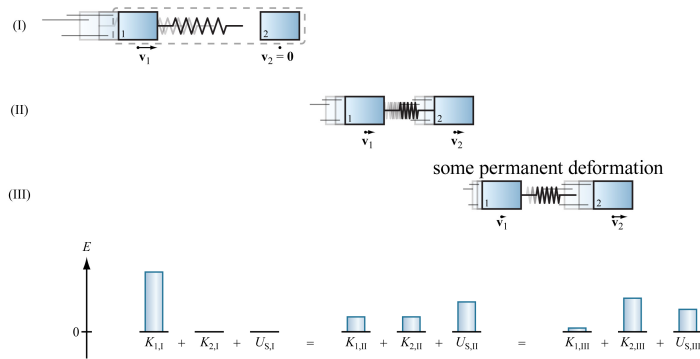
$$\Sigma K_i = \Sigma K_f$$

## not stuck

$$v_{1,i} + v_{1,f} = v_{2,i} + v_{2,f}$$

In C.O.M. frame, each of the two velocities simply reverses.
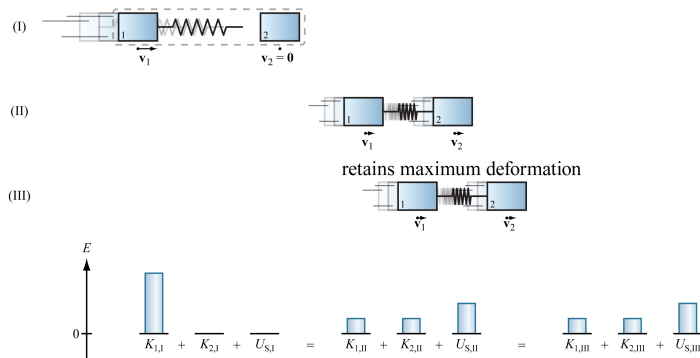
## Inelastic



The amount of kinetic energy transformed into other forms of energy during the collision process does not equal the amount of energy transformed back into kinetic energy.

$$\Sigma K_i \neq \Sigma K_f$$

## not stuck

## Perfectly inelastic



The amount of kinetic energy transformed into other forms of energy during the collision process exceeds, as much as possible, the amount of energy transformed back into kinetic energy.

$$\Sigma K_i \neq \Sigma K_f$$

## stuck

$$v_{1,f} = v_{2,f}$$