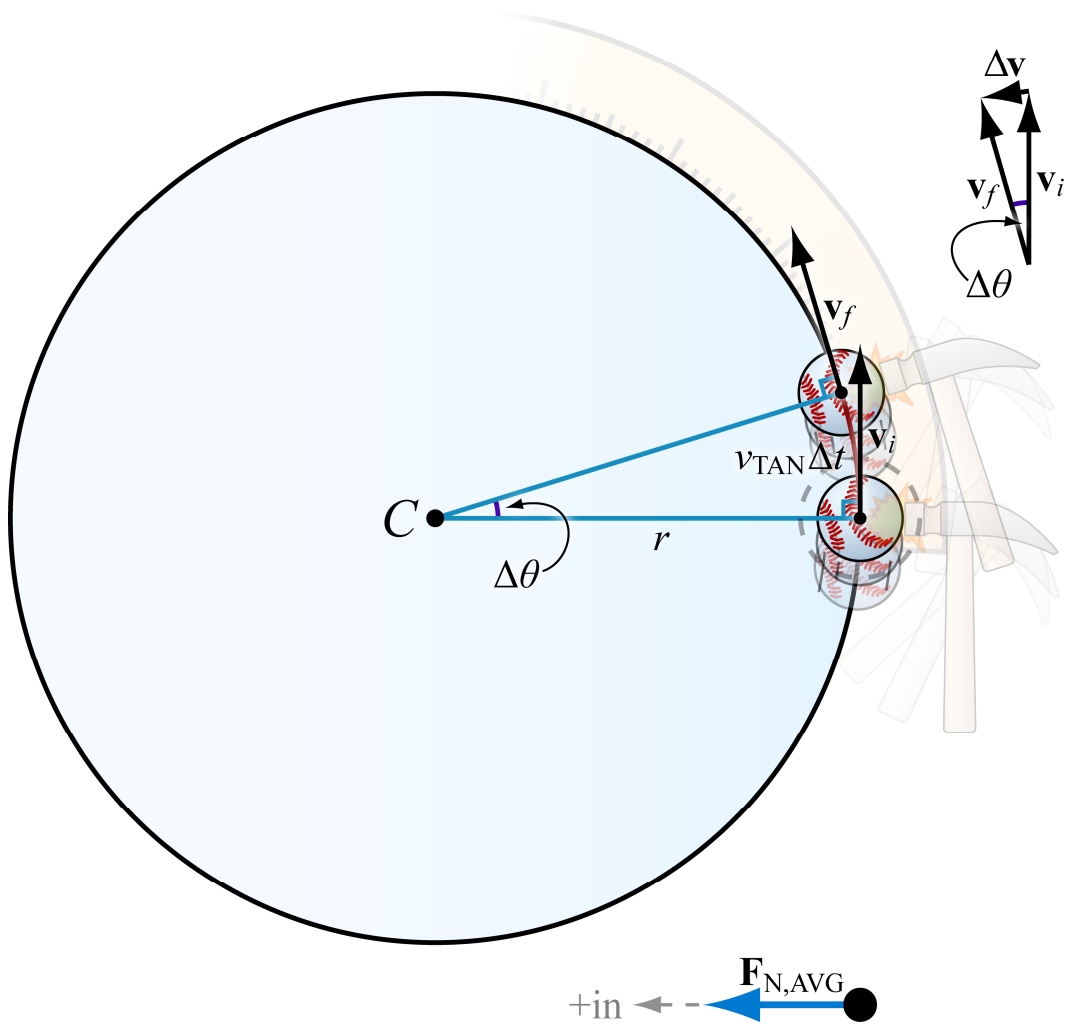


Uniform circular motion



Kinematics

- r radius
- $c = 2\pi r$ circumference
- T period (lap time)
- $f = \frac{1}{T}$ frequency $[f] = \frac{1}{s} = \text{Hz}$
- $\omega = 2\pi f$ angular frequency
- $v_{TAN} = \frac{c}{T} = \frac{2\pi r}{T}$ tangential speed
- $a_{IN} = \frac{v_{TAN}^2}{r}$ inward (centripetal) acceleration

Dynamics

$a_{IN} = \frac{\Sigma F_{IN}}{m}$ net of inward (centripetal) force components