

$$\vec{r}(t + \Delta t) = \vec{r}(t) + \Delta t \vec{v}(t) + \frac{\Delta t^2}{m} \vec{F}(t)$$

$$\vec{v}(t + \Delta t) = \vec{v}(t) + \frac{\Delta t}{2m} \left( \vec{F}(t) + \vec{F}(t + \Delta t) \right)$$