$$\frac{d^2}{dt^2}\left(x_i + x_i\right) = \left(U_i + u_i - V_i - v_i\right)\left(\frac{1}{\tau_p}\right) + g_i$$

$$\frac{d}{dt}\left(x_i + x_i\right) = V_i + v_i$$

$$t = \text{Time}$$

$$U_i = \text{Mean local velocity}$$

$$u_i = \text{Fluctuating local velocity}$$

$$V_i = \text{Mean droplet velocity}$$

$$v_i = \text{Fluctuating droplet velocity}$$

$$g_i = \text{gravity}$$

$$g_i = \text{gravity}$$

$$\tau_p = \text{Droplet relaxation time}$$