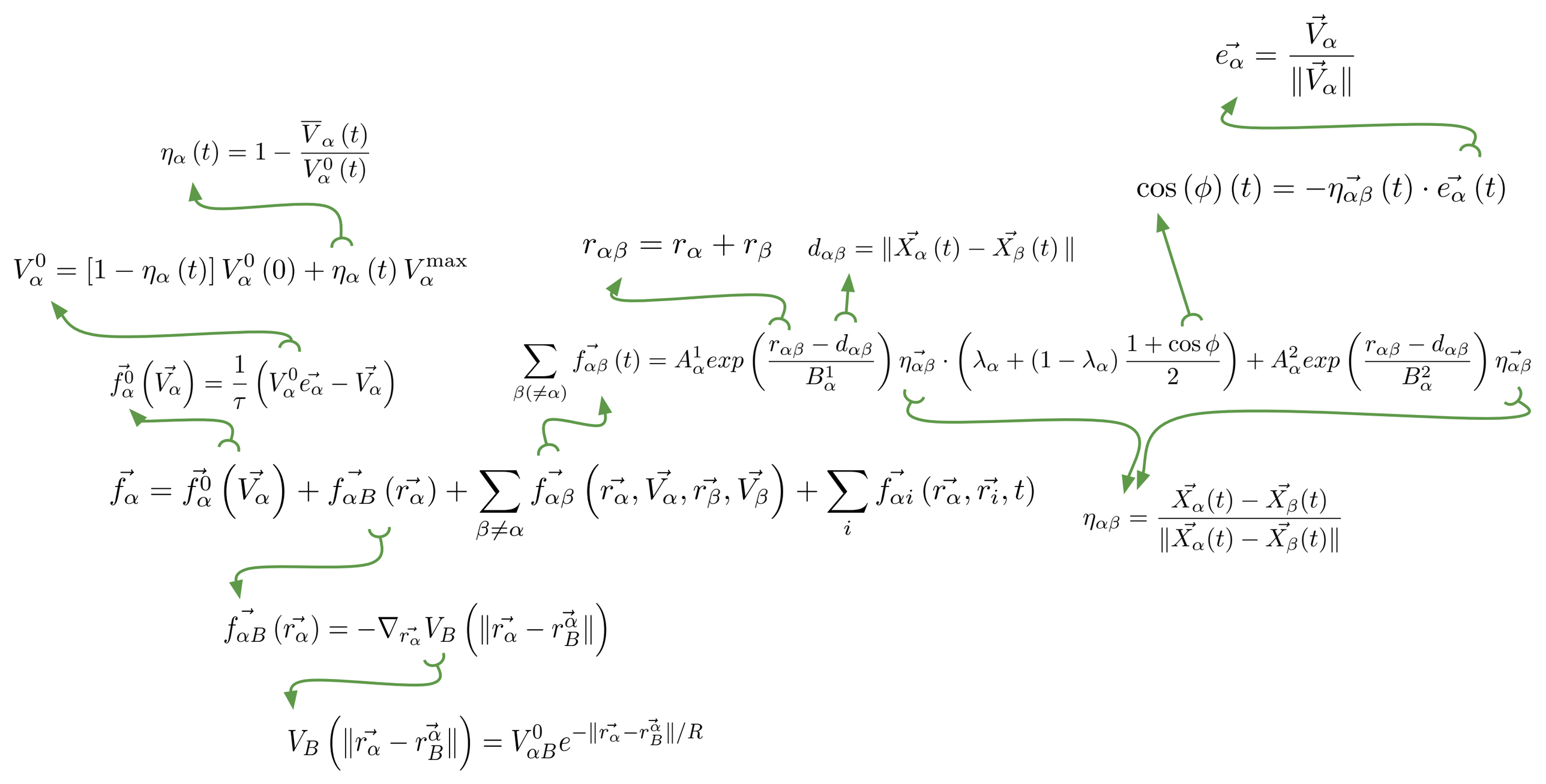
$\eta_\alpha(t) = 1 - \frac{\overline{V}_\alpha(t)}{V_\alpha^0(t)}$
$e_{\vec{\alpha}} = \frac{\vec{V}_\alpha}{\|\vec{V}_\alpha\|}$
$\cos(\phi)(t) = -\eta_{\vec{\alpha}\beta}(t) \cdot e_{\vec{\alpha}}(t)$
$V_\alpha^0 = [1 - \eta_\alpha(t)] V_\alpha^0(0) + \eta_\alpha(t) V_\alpha^{\max}$
$r_{\alpha\beta} = r_\alpha + r_\beta \quad d_{\alpha\beta} = \|\vec{X}_\alpha(t) - \vec{X}_\beta(t)\|$
$\vec{f}_\alpha^0\left(\vec{V}_\alpha\right) = \frac{1}{\tau}\left(V_\alpha^0 \vec{e_\alpha} - \vec{V}_\alpha\right)$
$\sum_{\beta(\neq\alpha)} \vec{f_{\alpha\beta}}(t) = A_\alpha^1 exp\left(\frac{r_{\alpha\beta} - d_{\alpha\beta}}{B_\alpha^1}\right) \vec{\eta_{\alpha\beta}} \cdot \left(\lambda_\alpha + (1-\lambda_\alpha)\frac{1+\cos\phi}{2}\right) + A_\alpha^2 exp\left(\frac{r_{\alpha\beta} - d_{\alpha\beta}}{B_\alpha^2}\right) \vec{\eta_{\alpha\beta}}$
$\vec{f_\alpha} = \vec{f_\alpha^0}\left(\vec{V_\alpha}\right) + \vec{f_{\alpha B}}(\vec{r_\alpha}) + \sum_{\beta\neq\alpha} \vec{f_{\alpha\beta}}\left(\vec{r_\alpha}, \vec{V_\alpha}, \vec{r_\beta}, \vec{V_\beta}\right) + \sum_i \vec{f_{\alpha i}}(\vec{r_\alpha}, \vec{r_i}, t)$
$\eta_{\alpha\beta} = \frac{\vec{X_\alpha}(t) - \vec{X_\beta}(t)}{\|\vec{X_\alpha}(t) - \vec{X_\beta}(t)\|}$
$\vec{f_{\alpha B}}(\vec{r_\alpha}) = -\nabla_{\vec{r_\alpha}} V_B\left(\|\vec{r_\alpha} - \vec{r_B^\alpha}\|\right)$
$V_B\left(\|\vec{r_\alpha} - \vec{r_B^\alpha}\|\right) = V_{\alpha B}^0 e^{-\|\vec{r_\alpha} - \vec{r_B^\alpha}\|/R}$