$$C_{3,i+1} = C_{3,i} + rac{C_{2,i} - C_{3,i}}{ au \, lpha_3 \, \prod_{i=1}^2 \left(1 - lpha_i
ight)} \, \Delta t$$

$$\tau \alpha_3 \prod_{i=1} (1 - \alpha_i)$$

$$\nu C_2 = \nu C_3 + \frac{\mathrm{d}C_2}{\mathrm{d}t} V \alpha_3 \prod_{i=1}^2 (1 - \alpha_i) \implies$$

$$\implies C_2 = C_3 + \frac{\mathrm{d}C_3}{\mathrm{d}t} \tau \alpha_3 \prod_{i=1}^2 (1 - \alpha_i) \implies$$

$$\implies \frac{\mathrm{d}C_3}{\mathrm{d}t} = \frac{C_2 - C_3}{\tau \alpha_3 \prod_{i=1}^2 (1 - \alpha_i)} \implies$$

 $\implies \frac{\Delta C_3}{\Delta t} = \frac{C_{3,i+1} - C_{3,i}}{\Delta t} = \frac{C_{2,i} - C_{3,i}}{\tau \alpha_3 \prod_{i=1}^2 (1 - \alpha_i)} \implies$

 $\implies C_{3,i+1} = C_{3,i} + \frac{C_{2,i} - C_{3,i}}{\tau \alpha_3 \prod_{i=1}^2 (1 - \alpha_i)} \Delta t$

$$C_2 = \nu C_3 + \frac{1}{dt} V \alpha_3 \prod_{i=1}^{n} (1 - \alpha_i) \implies$$

$$\implies C_2 = C_3 + \frac{dC_3}{dt} \tau \alpha_3 \prod_{i=1}^{n} (1 - \alpha_i) \implies$$

$$\implies \frac{dC_3}{dt} = \frac{C_2 - C_3}{2} \implies$$