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

$$\tau \prod_{i=1}^{3} (1 - \alpha_i)$$

$$\nu C_3 = \nu C_{out} + \frac{dC_{out}}{dt} V \prod_{i=1}^{3} (1 - \alpha_i) \implies dC_{out} = \frac{3}{2} (1 - \alpha_i)$$

$$\implies C_3 = C_{out} + \frac{dC_{out}}{dt} \tau \prod_{i=1}^3 (1 - \alpha_i) \implies$$

$$\implies \frac{dC_{out}}{dt} = \frac{C_3 - C_{out}}{\tau \prod_{i=1}^3 (1 - \alpha_i)} \implies$$

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

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