$$C_{3,i+1} = C_{3,i} + rac{C_{1,i} - C_{3,i}}{ au} rac{1 - eta}{(1 - lpha)\,0.5} \; \Delta t$$

$$(1 - \beta) \nu C_1 = (1 - \beta) \nu C_3 + (1 - \alpha) 0.5 V \frac{\mathrm{d}C_3}{\mathrm{d}t} \Longrightarrow$$

$$\Longrightarrow (1 - \beta) C_1 = (1 - \beta) C_3 + (1 - \alpha) 0.5 \tau \frac{\mathrm{d}C_3}{\mathrm{d}t} \Longrightarrow$$

$$\implies (1 - \beta) C_1 = (1 - \beta) C_3 + (1 - \alpha) 0.5 \tau \frac{dC_3}{dt} \implies$$

$$\implies \frac{dC_3}{dt} = \frac{C_1 - C_3}{\tau} \frac{1 - \beta}{(1 - \alpha) 0.5} \implies$$

$$\Delta C_3 = C_3 + 1 - C_3 = C_4 = C_3 = 1 - \beta$$

$$\Rightarrow (1-\beta)C_1 = (1-\beta)C_3 + (1-\alpha)0.5\tau \xrightarrow{dt} \Rightarrow$$

$$\Rightarrow \frac{dC_3}{dt} = \frac{C_1 - C_3}{\tau} \frac{1-\beta}{(1-\alpha)0.5} \Rightarrow$$

$$\Rightarrow \frac{\Delta C_3}{\Delta t} = \frac{C_{3,i+1} - C_{3,i}}{\Delta t} = \frac{C_{1,i} - C_{3,i}}{\tau} \frac{1-\beta}{(1-\alpha)0.5} \Rightarrow$$

$$\Rightarrow \frac{\mathrm{d}C_3}{\mathrm{d}t} = \frac{C_1 - C_3}{\tau} \frac{1 - \beta}{(1 - \alpha) \, 0.5} \Rightarrow$$

$$\Rightarrow \frac{\Delta C_3}{\Delta t} = \frac{C_{3,i+1} - C_{3,i}}{\Delta t} = \frac{C_{1,i} - C_{3,i}}{\tau} \frac{1 - \beta}{(1 - \alpha) \, 0.5} \Rightarrow$$

$$\Rightarrow C_{3,i+1} = C_{3,i} + \frac{C_{1,i} - C_{3,i}}{\tau} \frac{1 - \beta}{(1 - \alpha) \, 0.5} \, \Delta t$$