$$\boldsymbol{C_{2,i+1} = C_{2,i} + \frac{C_{1,i} - C_{2,i}}{\tau} \frac{\beta}{(1-\alpha_1)(1-\alpha_1)\alpha_2} \Delta t}$$

$$\beta \nu C_1 = \beta \nu C_2 + (1-\alpha_1)\alpha_2 V \frac{\mathrm{d}C_2}{\mathrm{d}t} \implies$$

$$\implies \beta C_1 = \beta C_2 + (1-\alpha_1)\alpha_2 \tau \frac{\mathrm{d}C_2}{\mathrm{d}t} \implies$$

$$\implies \frac{\mathrm{d}C_2}{\mathrm{d}t} = \frac{C_1 - C_2}{(1-\alpha_1)\alpha_2 \tau} \beta \implies$$

$$\implies \frac{\Delta C_2}{\Delta t} = \frac{C_{2,i+1} - C_{2,i}}{\Delta t} = \frac{C_{1,i} - C_{2,i}}{(1-\alpha_1)\alpha_2 \tau} \beta \implies$$

$$\implies C_{2,i+1} = C_{2,i} + \frac{C_{1,i} - C_{2,i}}{(1-\alpha_1)\alpha_2 \tau} \beta \, \Delta t$$