

INTRODUCTION TO NUMERICAL METHODS IN CHEMICAL ENGINEERING

$$\frac{dC_j}{dx} = 0, j = A, B, C, D$$

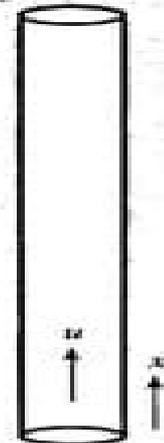


$$D \frac{d^2 C_A}{dx^2} - u \frac{dC_A}{dx} - k_1 C_A C_B = 0$$

$$D \frac{d^2 C_B}{dx^2} - u \frac{dC_B}{dx} - k_1 C_A C_B - k_2 C_B C_C = 0$$

$$D \frac{d^2 C_C}{dx^2} - u \frac{dC_C}{dx} + k_1 C_A C_B - k_2 C_B C_C = 0$$

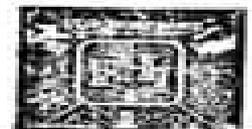
$$D \frac{d^2 C_D}{dx^2} - u \frac{dC_D}{dx} + k_2 C_B C_C = 0$$



$$D \frac{d^2 C_i}{dx^2} = D \frac{C_{i-1} - 2C_i + C_{i+1}}{\Delta x^2}$$

$$u \frac{dC_i}{dx} = u \frac{C_i - C_{i-1}}{\Delta x}$$

$$u C_{i+1} = u C_i - D \frac{dC_i}{dx}$$



Introduction To Numerical Methods In Chemical Engineering

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