$$\frac{d^2y}{dt^2} - 2\frac{dy}{dt} + 2y = 4e^{2t}$$

$$y(0) = -4 \quad . \quad y'(0) = 3.$$

← EDO(2) L cc NH.

$y(t) \Rightarrow y_1(t)$

$\frac{dy}{dt}(t) \Rightarrow \frac{dy_1(t)}{dt} = y_2(t)$

$\frac{d^2y(t)}{dt^2} \Rightarrow \frac{dy_2(t)}{dt}$

$y_1(0) = -4$

$y_2(0) = 3$

$$\frac{dy_2(t)}{dt} - 2y_2(t) + 2y_1(t) = 4e^{2t}$$

$$\frac{dy_1(t)}{dt} = y_2(t)$$

$$\frac{dy_2(t)}{dt} = -2y_1(t) + 2y_2(t) + 4e^{2t}$$

$y_1(0) = -4$

$y_2(0) = 3$

$$\frac{d}{dt}\begin{bmatrix} y_1(t) \\ y_2(t) \end{bmatrix} = \begin{bmatrix} 0 & 1 \\ -2 & 2 \end{bmatrix} \times \begin{bmatrix} y_1(t) \\ y_2(t) \end{bmatrix} + \begin{bmatrix} 0 \\ 4e^{2t} \end{bmatrix} \qquad \bar{y}(0) = \begin{bmatrix} -4 \\ 3 \end{bmatrix}$$

$$e^{At}\Big|_{t=0} = I$$

$$\frac{d}{dt} e^{At} = A e^{At}$$

$$\left[\frac{d}{dt} e^{At}\right]_{t=0} = A\, e^{At}\Big|_{t=0}$$

$$A = A \times I.$$

Capítulo I (2ª parte)

Ecuación Diferenciales No Lineales de Primer Orden

2° Parcial