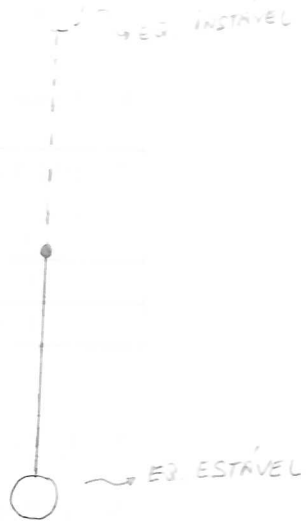
- DESVANTAGEM:

  * RESULTADOS SÃO GARANTIDOS APENAS NUMA VIZINHANÇA DE x_e

EXEMPLO 1

$$\begin{bmatrix} \dot{x}_1 \\ \dot{x}_2 \end{bmatrix} = \begin{bmatrix} x_2 \\ -\frac{g}{l} \operatorname{sen} x_1 \end{bmatrix}, \quad x(0) = \begin{bmatrix} 0 \\ 0 \end{bmatrix} = x_e$$



LINEARIZANDO:

$$\Delta x = \begin{bmatrix} x_1 - x_{1_0} \\ x_2 - x_{2_0} \end{bmatrix} = \begin{bmatrix} x_1 - 0 \\ x_2 - 0 \end{bmatrix} = \begin{bmatrix} x_1 \\ x_2 \end{bmatrix}$$

$$\left.\frac{\partial f}{\partial x}\right|_{x_0} = \begin{bmatrix} \left.\frac{\partial f_1}{\partial x_1}\right|_{x_0} & \left.\frac{\partial f_1}{\partial x_2}\right|_{x_0} \\ \left.\frac{\partial f_2}{\partial x_1}\right|_{x_0} & \left.\frac{\partial f_2}{\partial x_2}\right|_{x_0} \end{bmatrix} = \begin{bmatrix} 0 & 1 \\ -\frac{g}{l} \cos x_{1_0} & 0 \end{bmatrix} =$$

$$= \begin{bmatrix} 0 & 1 \\ -\frac{g}{l} & 0 \end{bmatrix}$$