

BIE 0320



BIO-USP

REVISÃO:

Sensibilidade

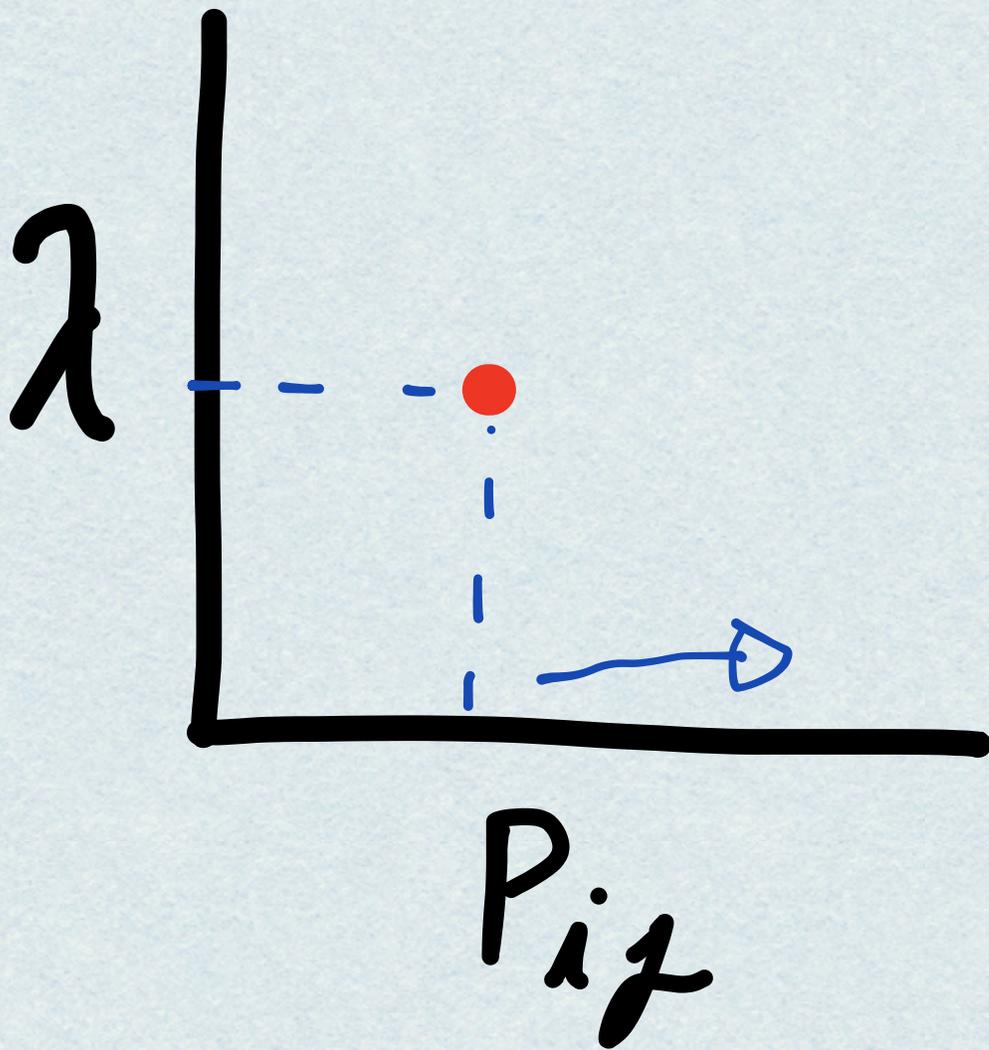
&

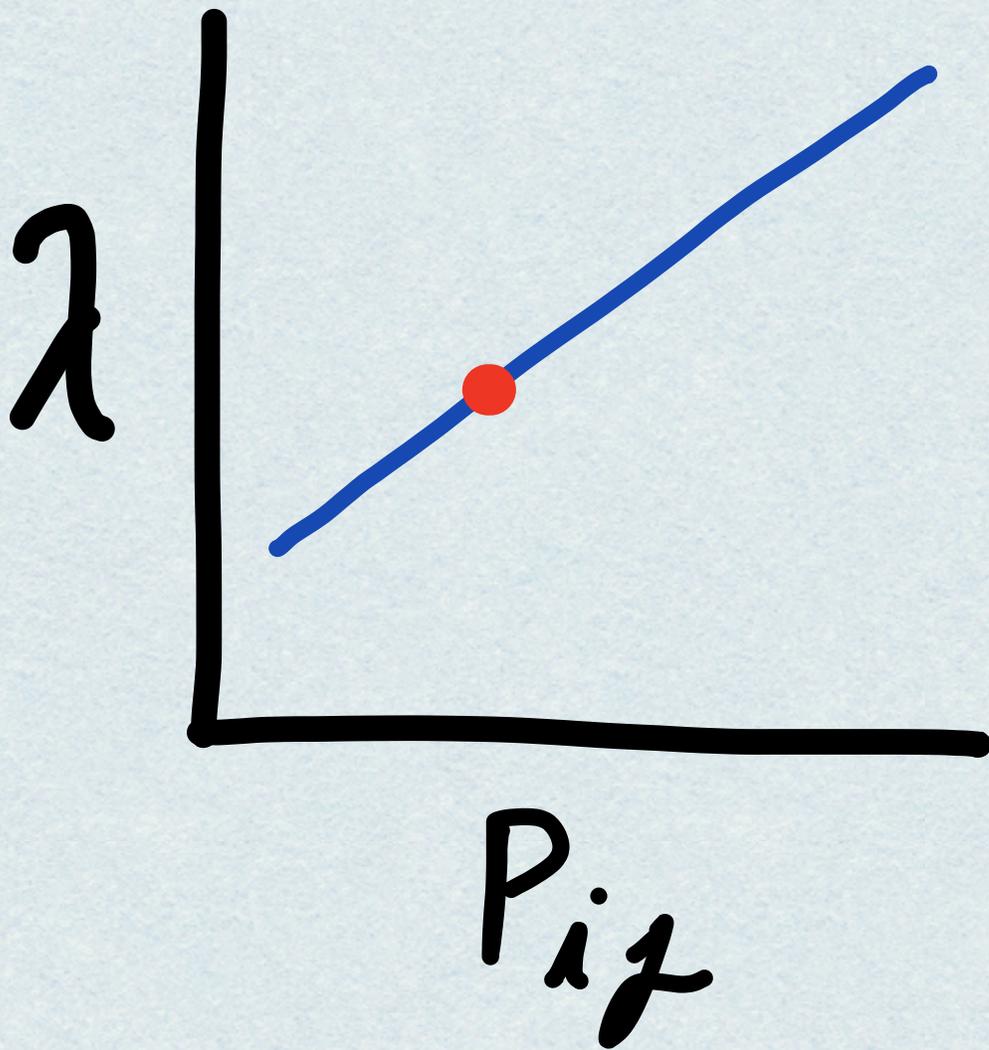
Elasticidade

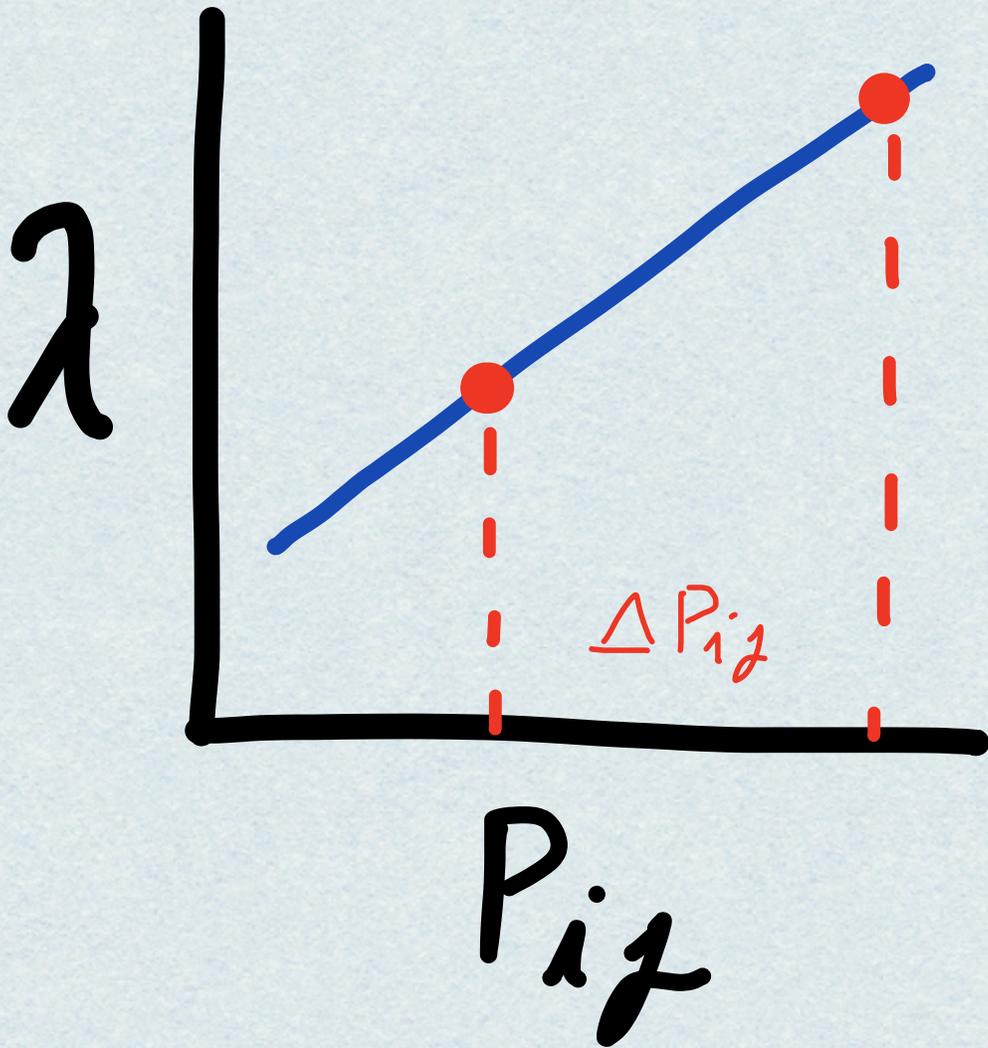
$$N_{t+1} = \lambda \cdot N_t$$

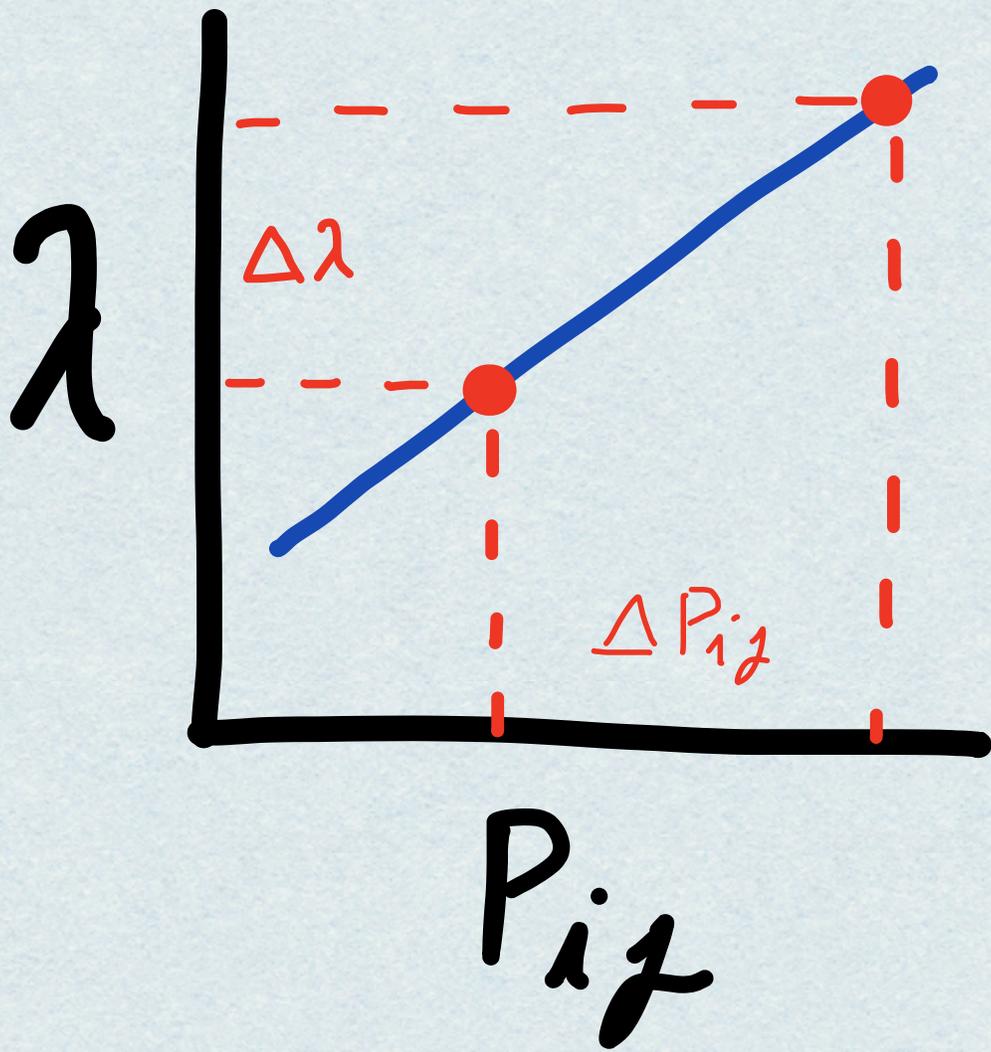
t

$$t+1 \begin{bmatrix} P_{11} & P_{21} & F_{31} \\ P_{12} & P_{22} & P_{32} \\ P_{13} & P_{23} & P_{33} \end{bmatrix} \cdot X \begin{bmatrix} N_1 \\ N_2 \\ N_3 \end{bmatrix}$$

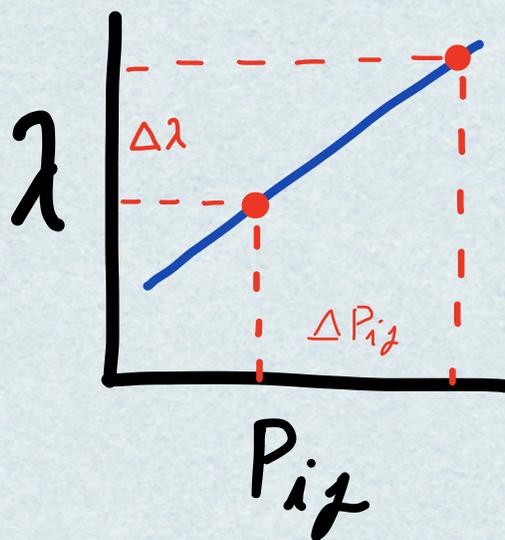




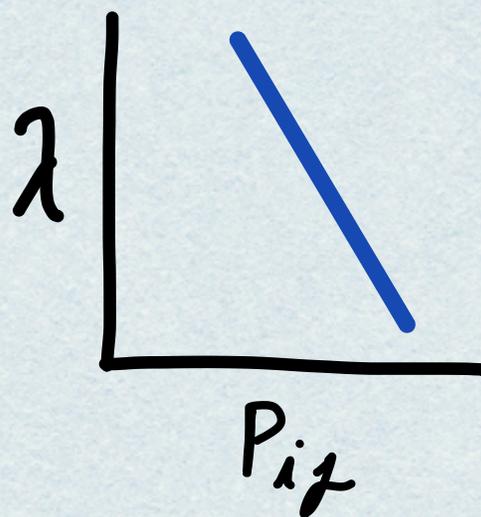
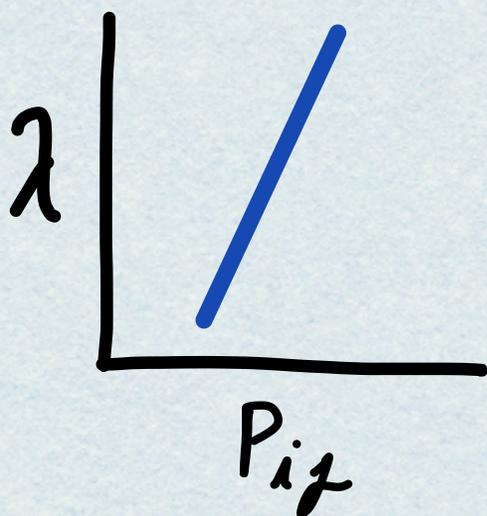




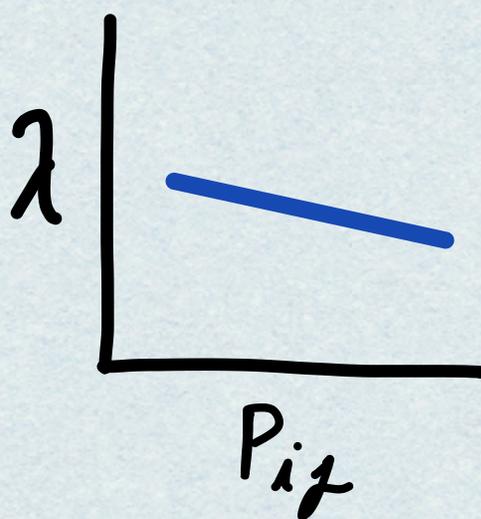
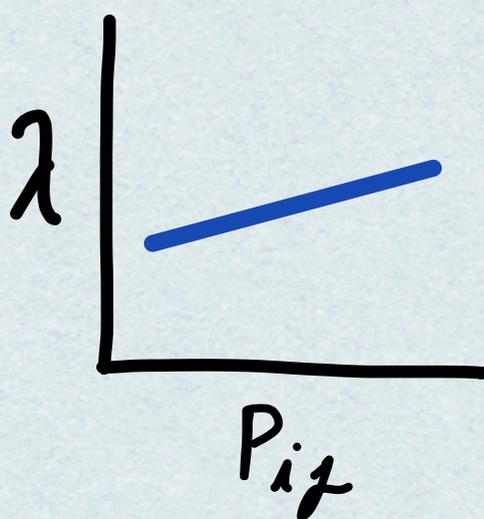
$$\text{INCLINAÇÃO} \tilde{=} \frac{\Delta \lambda}{\Delta P_{iz}}$$

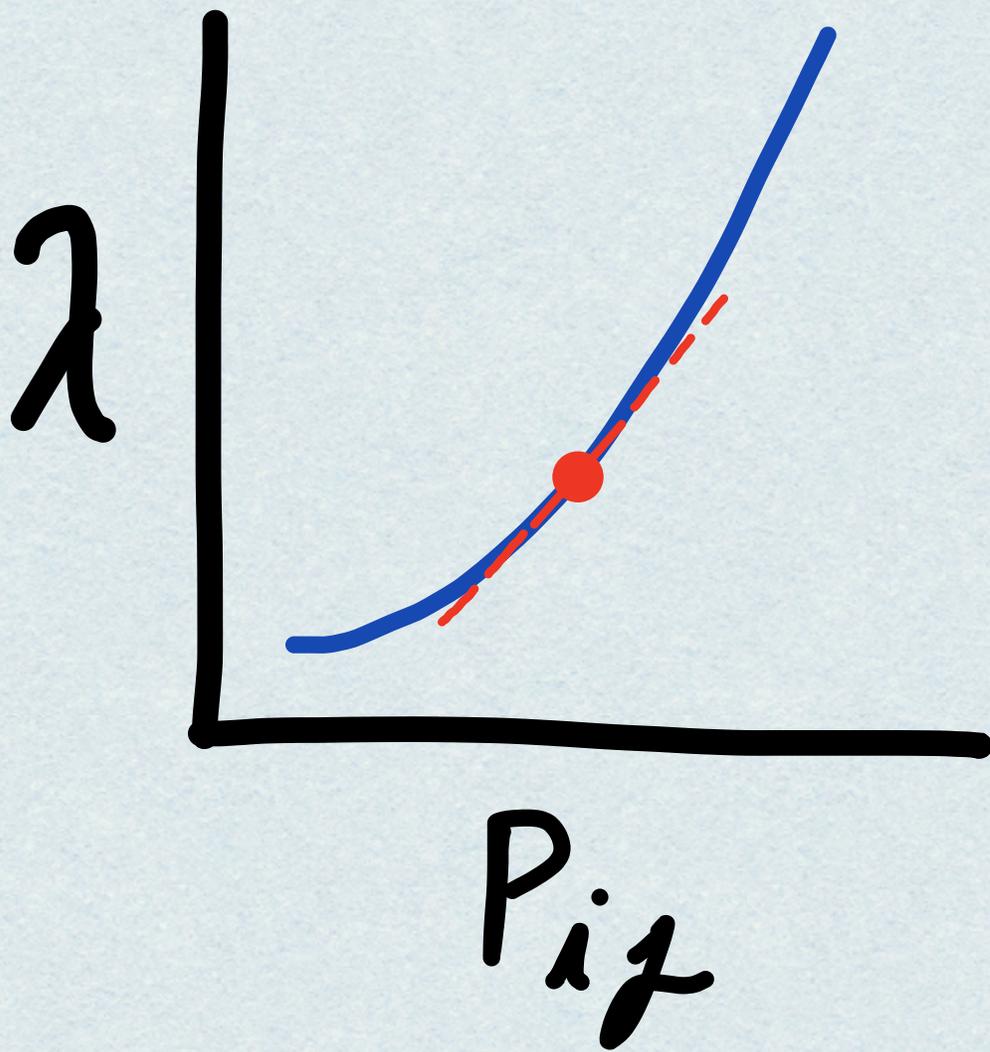


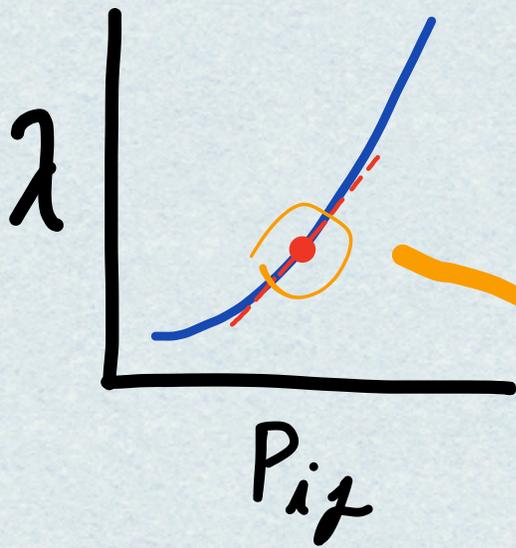
Sensibilidade Alta



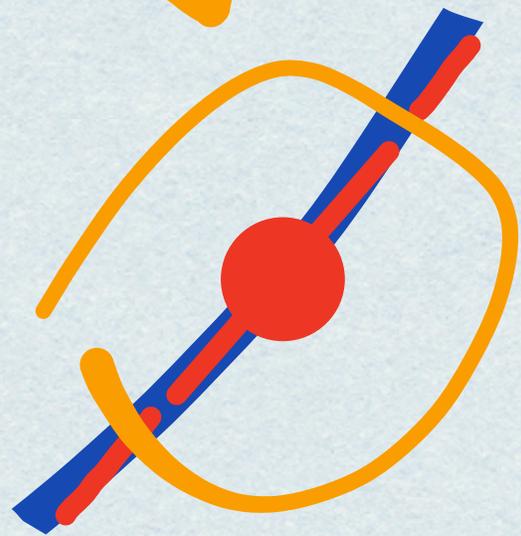
Sensibilidade baixa







PERTURBAÇÃO
NA VIZINHANÇA



$$S_{iz} = \frac{d\lambda}{dP_{iz}}$$

- Taxa de variação de λ em função de um elemento da matriz:

- Na vizinhança infinitesimal de um valor,
- Mantidos os demais elementos constantes.

$$E_{ij} = S_{ij} \cdot \frac{P_{ij}}{\lambda}$$

- Sensibilidade padronizada,
tal que:

- Elementos zero na matriz de transição tenham elasticidade zero;
- A soma dos valores de elasticidade seja sempre um.

