



Fator de retardamento

$$R_d \frac{\partial c}{\partial t} = D_{hl} \frac{\partial^2 c}{\partial z^2} - u \frac{\partial c}{\partial z}$$

$$R_d = 1 + \frac{\rho}{n} K_d = \frac{u}{u_c}$$



Isotermas de adsorção

$$S = K_d \cdot C_e$$

linear

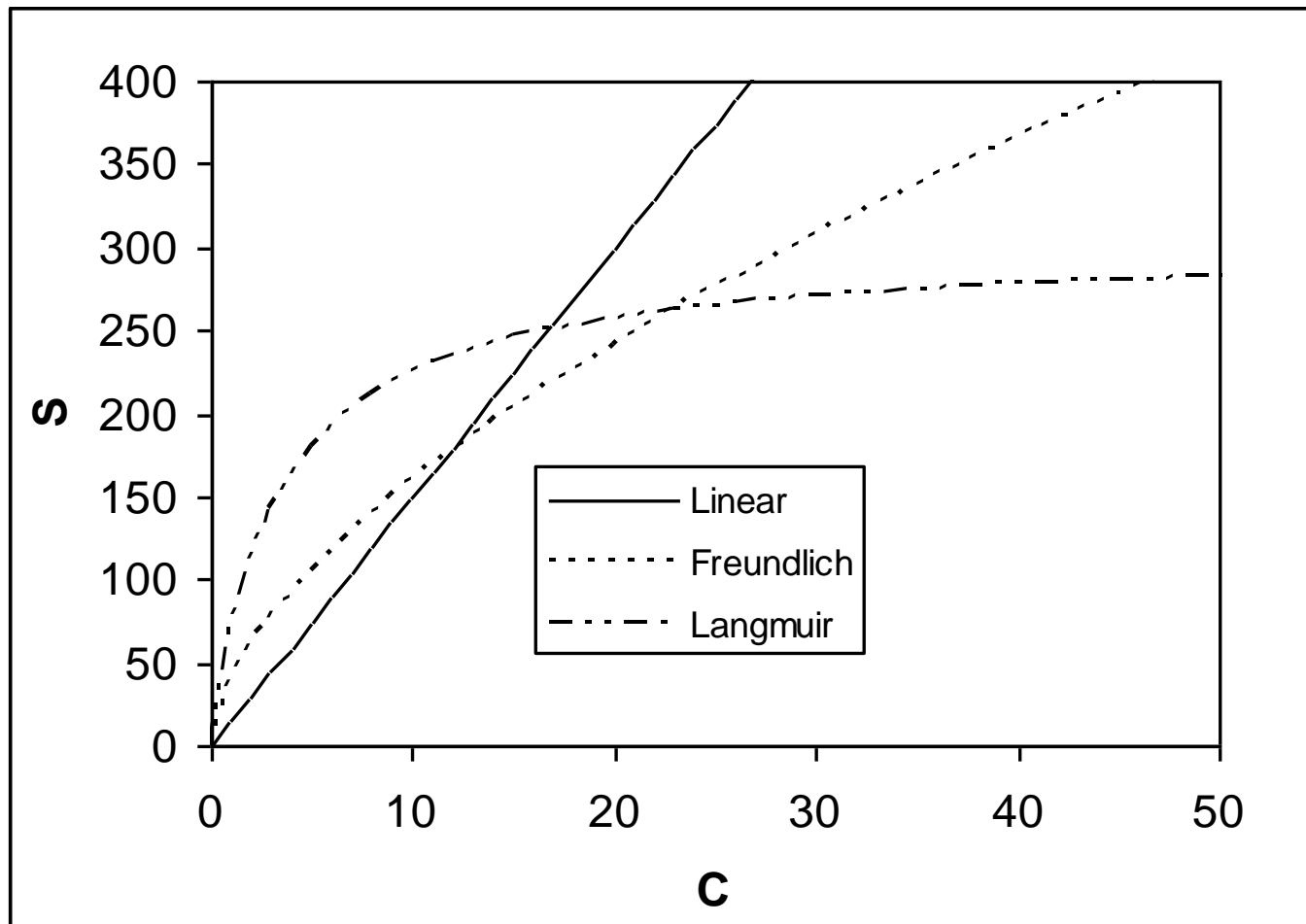
$$S = K_f \cdot C_e^\varepsilon$$

Freundlich

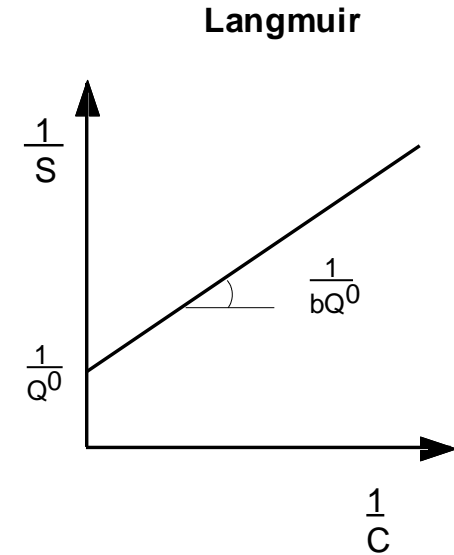
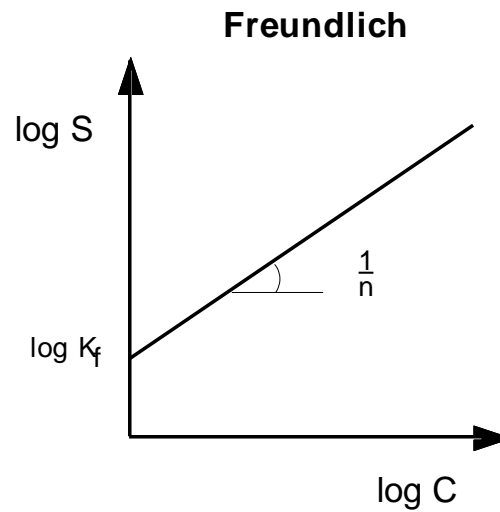
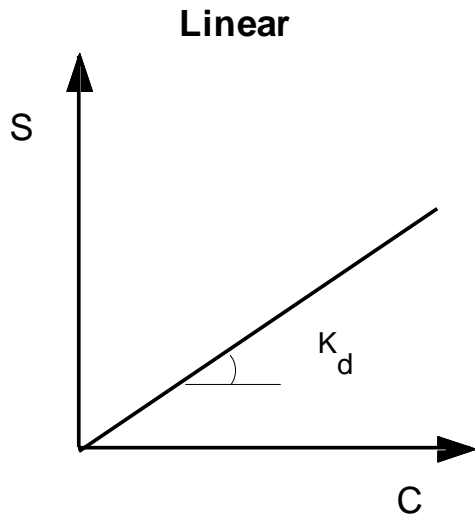
$$S = \frac{K_L M C_e}{1 + M C_e}$$

Langmuir

Isotermas de adsorção



Parâmetros de algumas isotermas





Fator de retardamento

$$R_d = 1 + \frac{\rho K_d}{\theta}$$

$$R_d = 1 + \frac{\rho K_f C_e^{\varepsilon-1}}{\theta}$$