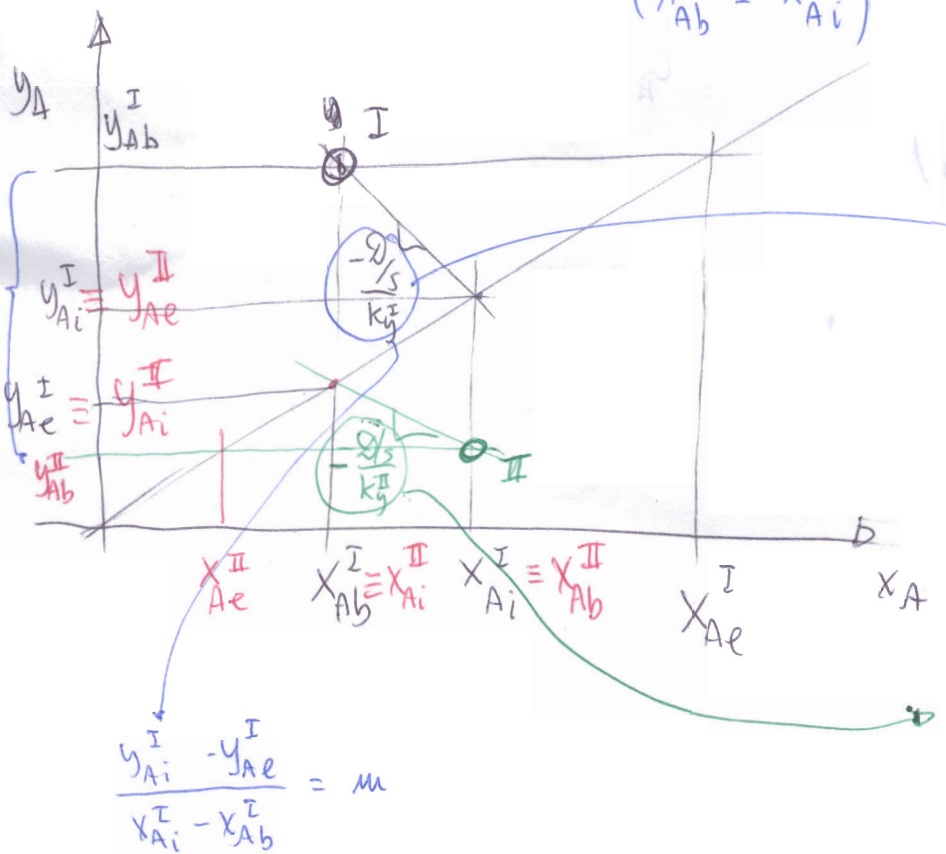


$$N_{Az} = k_y^I (y_{Ab}^I - y_{Ai}^I) = \frac{\mathcal{D}}{s} (x_{Ai}^I - x_{Ab}^I) = k_y^{II} (y_{Ai}^{II} - y_{Ab}^{II})$$

$$(x_{Ab}^{II} - x_{Ai}^{II})$$



$$\left\{ \begin{aligned} k_y^{II} (y_{Ab}^I - y_{Ai}^I) &= \frac{\mathcal{D}}{s} (x_{Ai}^I - x_{Ab}^I) \\ - \frac{y_{Ab}^I - y_{Ai}^I}{x_{Ab}^I - x_{Ai}^I} &= \frac{\mathcal{D}/s}{k_y^I} \end{aligned} \right.$$

$$\left\{ \begin{aligned} \frac{\mathcal{D}}{s} (x_{Ab}^{II} - x_{Ai}^{II}) &= k_y^{II} (y_{Ai}^{II} - y_{Ab}^{II}) \\ - \frac{y_{Ai}^{II} - y_{Ab}^{II}}{x_{Ai}^{II} - x_{Ab}^{II}} &= \frac{\mathcal{D}/s}{k_y^{II}} \end{aligned} \right.$$

$$N_{Az} = \cancel{k_y} (y_{Ab}^I - y_{Ab}^{II})$$

$$y_{Ab}^I - y_{Ab}^{II} = (y_{Ab}^I - y_{Ai}^I) + \overbrace{(y_{Ai}^I - y_{Ae}^I)}^{m(x_{Ai}^I - x_{Ab}^I)}$$

$$\frac{N_{Az}}{\cancel{k_y}} = \frac{k_{Az}}{k_y^I} + \frac{m N_{Az}}{\mathcal{D}/s} + \frac{N_{Az}}{k_y^{II}} + (y_{Ai}^I - y_{Ab}^{II})$$

$$\rightarrow \frac{1}{\cancel{k_y}} = \frac{1}{k_y^I} + \frac{m}{\mathcal{D}/s} + \frac{1}{k_y^{II}}$$