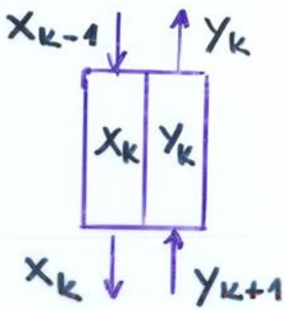
$\rightleftarrows$

1. * mích L $\quad Pe_L = 0$
   * mích V $\quad Pe_V = 0$

$$N_x = \int_{x_k}^{x_{k-1}} \frac{dx}{x - x^*}$$

$$N_y = \int_{y_{k+1}}^{y_k} \frac{dy}{y^* - y}$$



$$\dot{m}_L (x_{k-1} - x_k) = \dot{m}_V (y_k - y_{k+1}) =$$

$$= N_x \dot{m}_L (x_k - x_k^*) = N_y \dot{m}_V (y_k^* - y_k)$$

$$N_x = \frac{x_{k-1} - x_k}{x_k - x_k^*} \qquad N_y = \frac{y_k - y_{k+1}}{y_k^* - y_k}$$

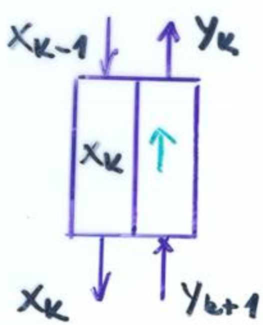
$$\frac{1}{E_x^M} = 1 + \frac{1}{N_x} \qquad \frac{1}{E_y^M} = 1 + \frac{1}{N_y}$$

$\frac{1}{E^M} = 1$ pro $N \to \infty$, $K \to \infty$

$$\boxed{E_x^M = \frac{x_{k-1} - x_k}{x_{k-1} - x_k^*}}$$

$$\boxed{E_y^M = \frac{y_k - y_{k+1}}{y_k^* - y_{k+1}}}$$

2. * mích L $\quad Pe_L = 0$
   píst. V $\quad Pe_V = \infty$



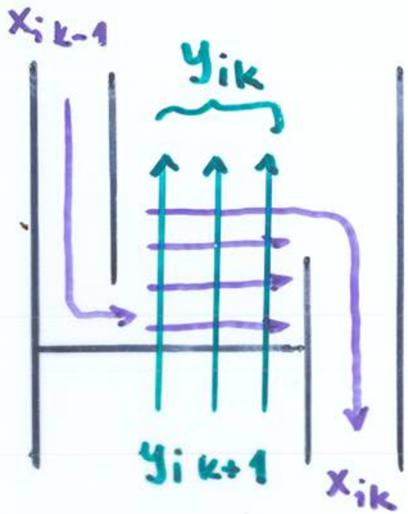
konst

$$-\frac{dy}{dz} = N_y (y_k^* - y)$$

$$-\int_{y_k}^{y_{k+1}} \frac{dy}{y_k^* - y_k} = N_y \int_0^1 dz$$

$$\ln \frac{y_k^* - y_{k+1}}{y_k^* - y_k} = N_y \qquad \frac{y_k^* - y_k}{y_k^* - y_{k+1}} = e^{-N_y}$$

$$E_y^M = 1 - e^{-N_y}$$



píst. V ↑ , * mích. L ↕

Lokální (bodová) $E_{iy} = \dfrac{y_i - y_{i\,k+1}}{y_i^* - y_{i\,k+1}}$

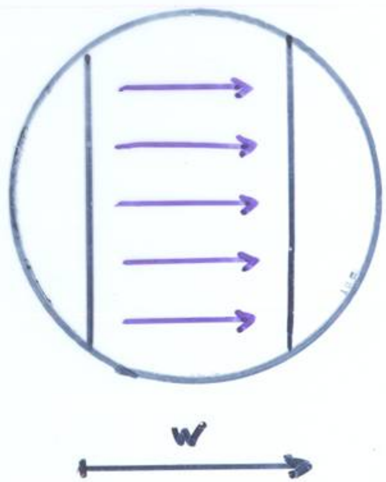
píst. V ↑ : $E_{iy} = 1 - e^{-N_y}$ (⇄)

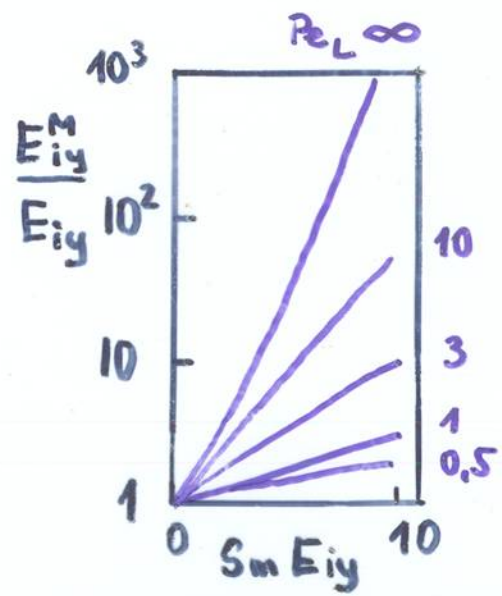
a) píst. L →, $[E_{iy}]$

$E_{iy}^M = f(E_{iy}, Sm)$

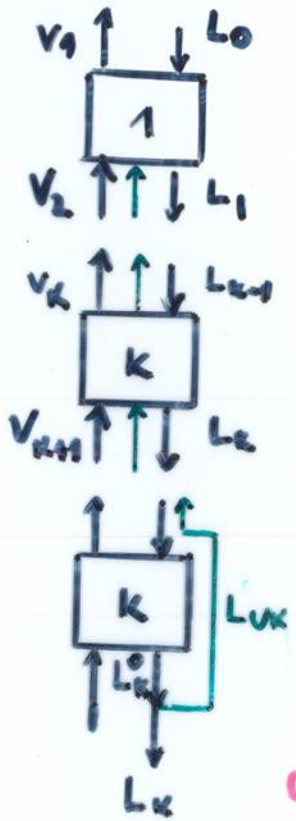
b) promích. L ↔

$E_{iy}^M = f(E_{iy}, Sm, Pe_L)$





ÚNOS L



$$V_{k+1} + L_{U\,k+1} + L_{k-1} - \underbrace{L_k - L_{Uk}}_{L_k^0} - V_k = 0$$

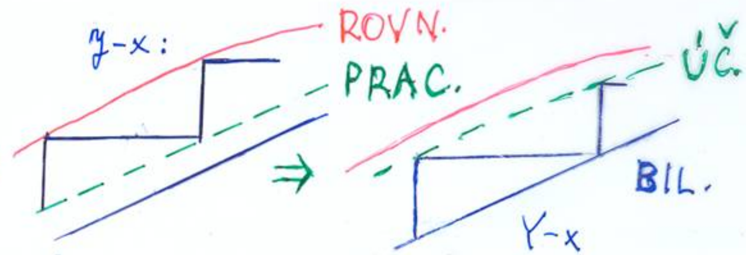
$$L_{k-1}\, x_{i\,k-1} - \left[\underbrace{L_k + L_{Uk}} + V_k K_{ik}\right] x_{ik} + \left[\underbrace{V_{k+1} K_{i\,k+1} + L_{U\,k+1}}\right] x_{i\,k+1} = 0$$

$u_{Lk}^0 = \dfrac{L_{Uk}}{L_k^0}$ $\qquad L_k^0 \qquad$ $u_{L\,k+1}^0 L_{k+1}^0$

$u_{Lk} = \dfrac{L_{Uk}}{L_k}$ $\qquad (1+u_{Lk})L_k \qquad$ $u_{L\,k+1} L_{k+1}$

$u_{Vk} = \dfrac{L_{Uk}}{V_k}$ $\qquad (u_{Vk} + K_{ik})V_k \qquad$ $(u_{V\,k+1} + K_{i\,k+1})V_{k+1}$

COLBURN:



$$D = V_1 - L_0 = V_{k+1} + \overset{u_{V\,k+1}}{e} V_{k+1} - L_k$$

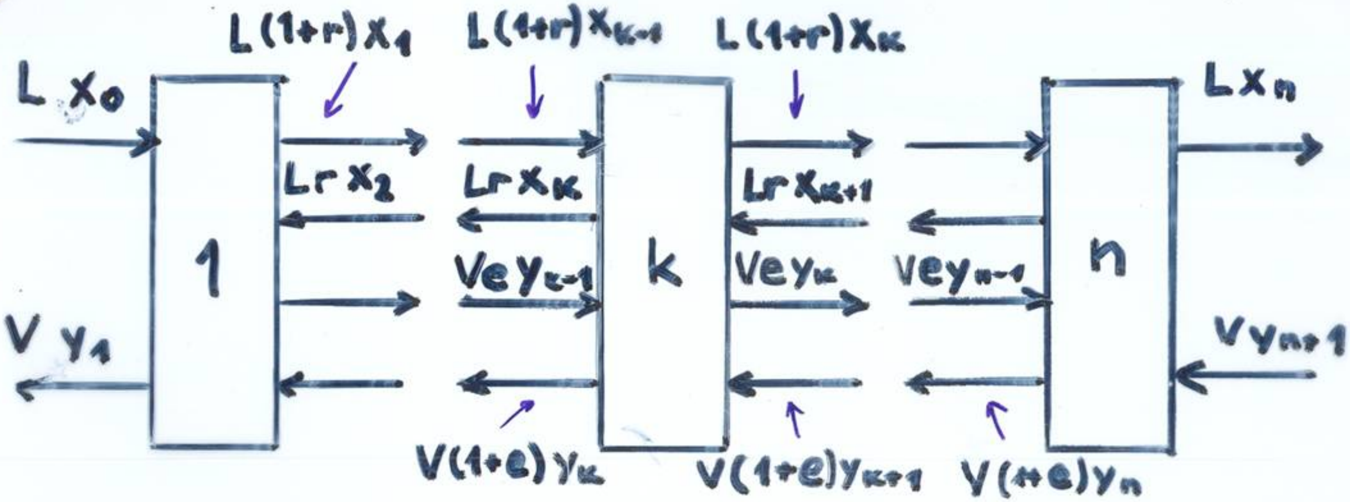
$$Dx_D = y_{k+1} V_{k+1} + x_{k+1}\, e V_{k+1} - x_k (L_0 + eV)$$

$$Y_{k+1} V_{k+1} - x_k L_0 \qquad\qquad Y_{k+1} = y_{k+1} - e(x_k - x_{k+1})$$

$$E^M = \frac{y_k - y_{k+1}}{y_k^M - y_{k+1}} \qquad K_{ik} x_{ik} \rightarrow y_k^M$$

$$E^Z = \frac{Y_k - Y_{k+1}}{y_k^M - Y_{k+1}}$$

$$E^Z = \frac{E^M}{1 + e\dfrac{V}{L_0} E^M} = \frac{E^M}{1 + \dfrac{\varepsilon E^M}{L/A}}$$



$$1:\ L[x_0 - (1+r)x_1 + r x_{k+1}] = V[(1+e)y_1 - (1+e)y_2]$$

$$k:\ L[(1+r)x_{k-1} - (1+2r)x_k + r x_{k+1}] =$$

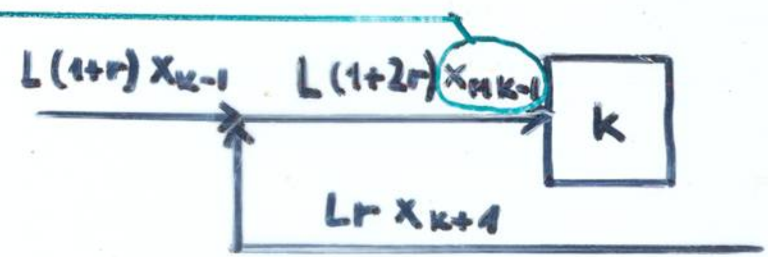
$$= V[-e y_{k-1} + (1+2e)y_k - (1+e)y_{k+1}]$$

$$y_{ik} = K_{ik} x_{ik} \Rightarrow A_{ik} x_{ik-1} + B_{ik} x_{ik} + C_{ik} x_{ik+1} = -R_{ik}$$

$$E^M_{ixk} = \frac{x_{ik-1} - x_{ik}}{x_{ik-1} - x^M_{ik}}$$

$$\uparrow$$

$$\frac{y_{ik}}{K_{ik}}$$



$$\Rightarrow y_{ik} = f(x_{ik-1}, x_{ik}, x_{ik+1})$$

ROD:

$$X_k = (1+r)\,x_{ik} - r\,x_{ik+1} \qquad X_0 = x_{i0}, \quad X_n = x_{in}$$

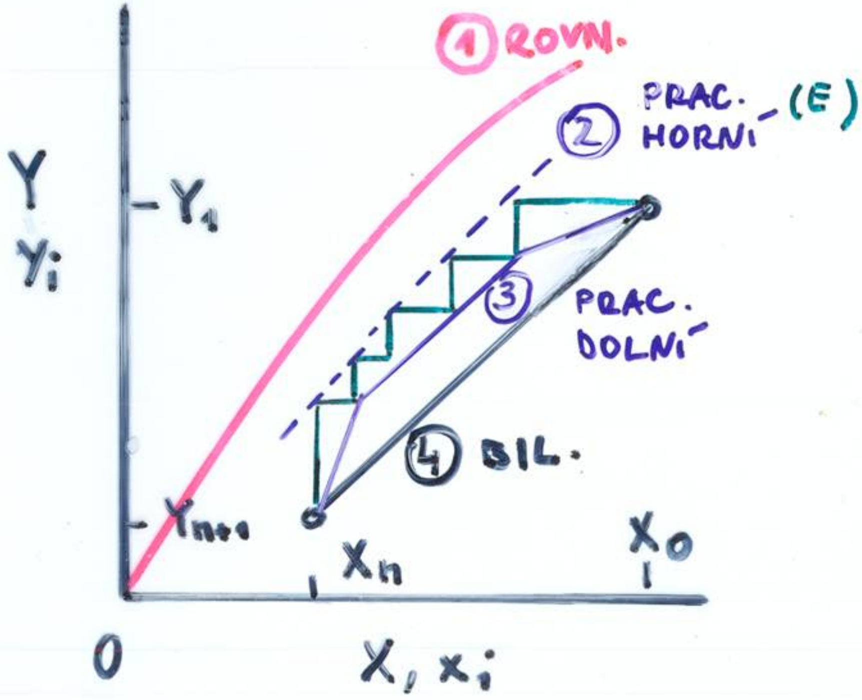
$$Y_k = (1+e)\,y_{ik} - e\,y_{ik-1} \qquad Y_1 = y_{i1}, \quad Y_{n+1} = y_{in+1}$$

$$L\,(X_{k-1} - X_k) = V\,(Y_k - Y_{k+1})$$

$$P_f = V\,Y_{k+1} - L\,X_k = V\,y_{i1} - L\,x_{i0} = V\,y_{in+1} - L\,x_{in}$$

$$E^M_{ix} \sim X_{k-1} - X_k = N_x\,(x_{ik} - x^M_{ik})$$

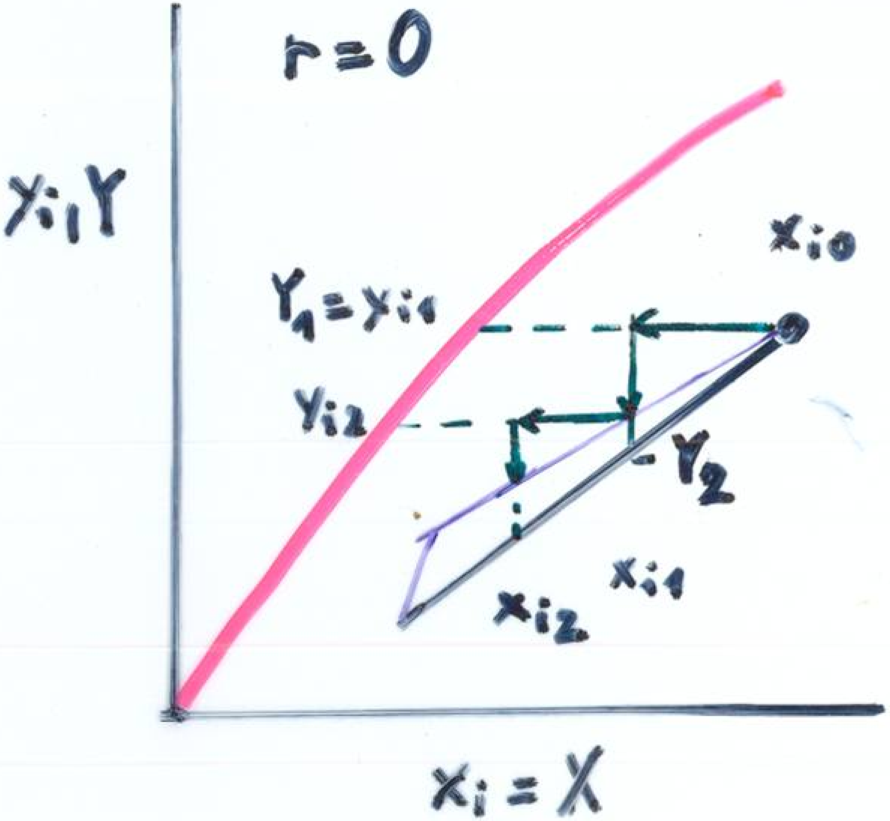
$$\frac{1}{E^M_x} = 1 + \frac{1}{N_x}$$



$n \to \infty$ 2 ≡ 3 dif.

$e, r \to 0$ 3 ≡ 4 ∞ prom.

$E \to 1$ 1 ≡ 2 rovn. st.



$$x_{ik-1} - x_{ik} = N_x \left(x_{ik} - x_{ik}^{M} \right)$$

$$\Rightarrow \quad x_{ik} = \frac{x_{ik-1} - N_x\, x_{ik}^{M}}{1 + N_x}$$

$$Y_{k+1} = \frac{L}{V} x_{ik} + \frac{P_i}{V}$$

$$y_{ik+1} = \frac{Y_{k+1}}{1+e} + \frac{e}{1+e} y_{ik}$$