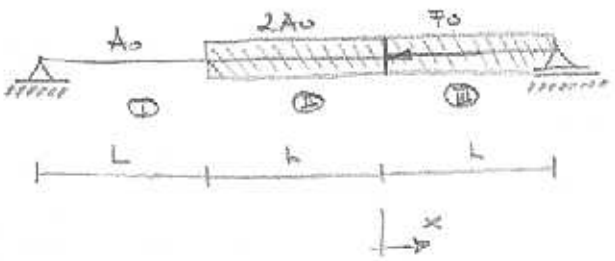
Imamo naslednji sistem



V vseh poljih je $\frac{d^2 u_{lin}}{dx} = 0$, ker ni prisotne obremenitve

- Robni pogoji so:

$u_1(x=-2L) = 0$ ✓

$N_3(x=L) = 0$ ✓

$u_3'(x=L) = 0$

- Pogoji kompatibilnega prehoda

$u_1(x=-L) = u_2(x=-L)$ ✓

$u_2(x=0) = u_3(x=0)$ ✓

$N_1(x=-L) = N_2(x=-L)$ ✓

↳ $EA_0\, u_1'(x=-L) = 2EA_0\, u_2'(x=-L)$

↳ Velja po še:

$N_2 + F_0 = N_3$

$N_2(x=0) + F_0 = N_3(x=0)$

↳ Se pravi pri $x=0$ velja

$2EA_0\, u_2'(x=0) + F_0 = 2EA_0\, u_3'(x=0)$

Zapišemo:

$u_1(x) = \tilde{C}_0 + \tilde{C}_1 x = (x+2L)\, C_0 = C_0 + C_1 L = (x+2L) C_0$

$u_2(x) = u_1(x) + (C_2 + C_3 x) = u_1(x) + C_1 x$

$u_3(x) = u_1(x) + u_2(x) + (C_4 + C_5 x) = u_2(x) + C_2 x$

$u_1(x) + (C_2 + C_3 x)$

$u_1'(x) = C_0$

$u_2'(x) = C_0 + C_3$

$u_3'(x) = C_0 + C_0 + C_3 + C_5$

ker $\frac{d^2 u_{lin}}{dx} = 0$ vi obl

- $N_3(x=L) = 2EA_0 \cdot u_3'(x=L) = \varnothing$

↳ $u_3'(x=L) = \varnothing = \boxed{2C_0 + C_3 + C_5 = \varnothing}$

- $u_2(x=\varnothing) = u_3(x=\varnothing)$

$[2LC_0 + C_2] = 2LC_0 + [2LC_0 + C_2] + C_4$

$\boxed{C_4 = -2LC_0}$

- $N_1(x=-L) = N_2(x=-L)$

$EA_0 u_1'(x=-L) = 2EA_0 u_2'(x=-L)$

$C_0 = 2[C_0 + C_3]$

$C_0 = -2C_3 \rightarrow \boxed{C_3 = -\frac{1}{2}C_0}$

- $u_1(x=-L) = u_2(x=-L)$

$-LC_0 = -LC_0 + [C_2 - LC_3]$

$C_2 = LC_3 \rightarrow \boxed{C_2 = -\frac{1}{2}C_0}$

↳ • $2C_0 - \frac{1}{2}C_0 + C_5 = \varnothing$

$\boxed{C_5 = -\frac{3}{2}C_0}$

- $2EA_0 \cdot [C_0 - \frac{1}{2}C_0] + F_0 = 2EA_0[2C_0 - \frac{1}{2}C_0 - \frac{3}{2}C_0]$

$EA_0 C_0 = -F_0$

$\boxed{C_0 = -\frac{F_0}{EA_0}}$

Sledi:

$C_0 = -\frac{F_0}{EA_0}$

$C_2 = \frac{F_0}{2EA_0}$

$C_3 = \frac{F_0}{2EA_0}$

$C_4 = \frac{2LF_0}{EA_0}$

$C_5 = \frac{3F_0}{2EA_0}$

$u_1(x) = (x+2L)\left[-\frac{F_0}{EA_0}\right]$

$u_2(x) = (x+2L)\left[-\frac{F_0}{EA_0}\right] + \left[\frac{F_0}{2EA_0} + \frac{F_0}{2EA_0}x\right] =$

$u_2(x) = (x+2L)\left[-\frac{F_0}{EA_0}\right] + \left(\frac{F_0}{2EA_0}\right)\cdot[L+x] =$

$u_2(x) = \frac{F_0}{EA_0}\left[-x - 2L + \frac{1}{2}L + \frac{1}{2}x\right] =$

$u_2(x) = \frac{F_0}{2EA_0}[x + 3L]$

$u_3(x) = (x+2L)\left[-\frac{F_0}{EA_0}\right] - \frac{F_0}{2EA_0}[x+3L] + \left[\frac{2LF_0}{EA_0} + \frac{3F_0}{2EA_0}x\right]$

$u_3(x) = \frac{F_0}{EA_0}\left[-x - 2L - \frac{1}{2}x - \frac{3}{2}L + 2L + \frac{3}{2}x\right]$

Heaviseidova korekcija funkcije:

$$u_1(x) = (x + 2L)\left[-\frac{T_0}{EA_0}\right]$$

$$u_2(x) = (x + 2L)\left[-\frac{T_0}{EA_0}\right] + \left[\frac{T_0 L}{2EA_0} + \frac{T_0 x}{2EA_0}\right]$$

$$u_3(x) = (x+2L)\left[-\frac{T_0}{EA_0}\right] + \left[\frac{T_0 L}{2EA_0} + \frac{T_0 x}{2EA_0}\right] + \left[\frac{2LT_0}{EA_0} + \frac{3T_0 x}{2EA_0}\right]$$

$$u(x) = (x+2L)\left[-\frac{T_0}{EA_0}\right] + H_1(x+L)\left[\frac{T_0 L}{2EA_0} + \frac{T_0 x}{2EA_0}\right] + H_2(x+0)\left[\frac{2LT_0}{EA_0} + \frac{3T_0 x}{2EA_0}\right]$$