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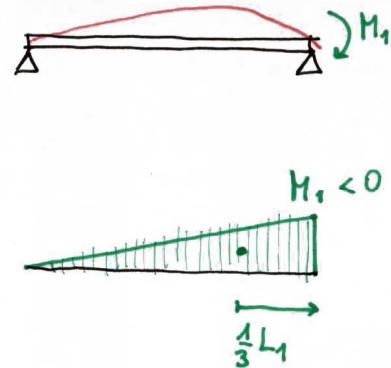
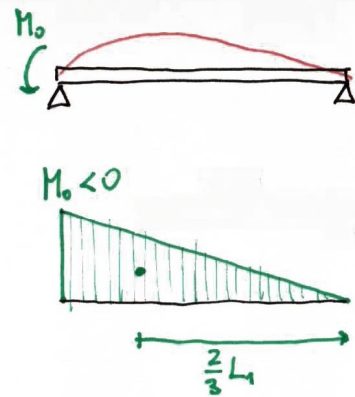
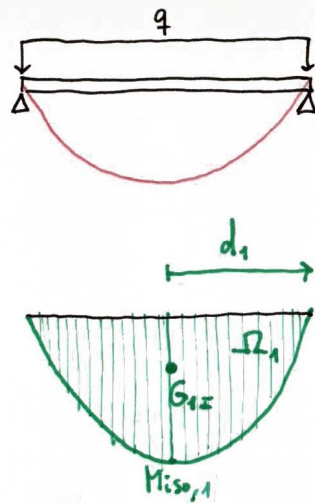
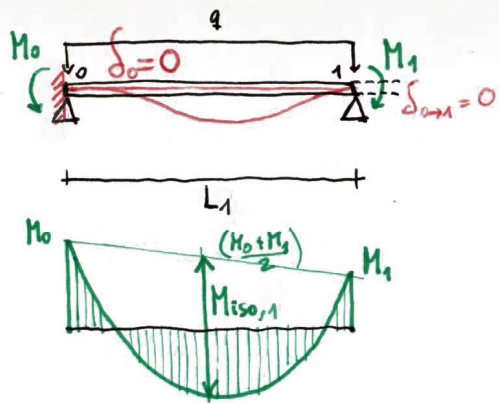
(I)

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(II)

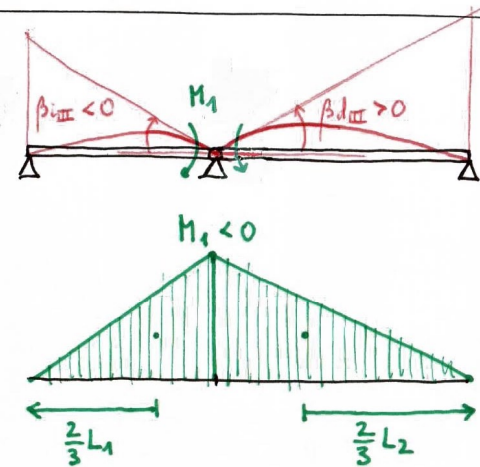
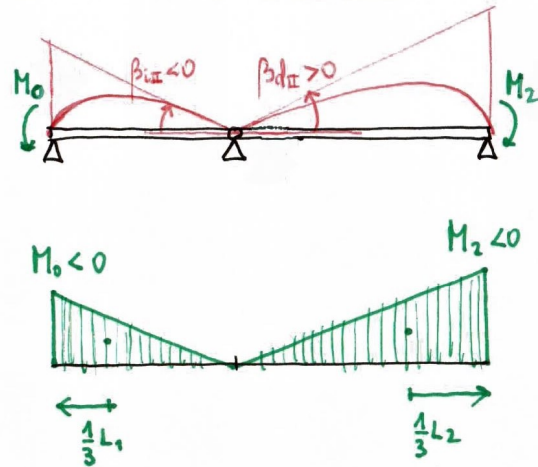
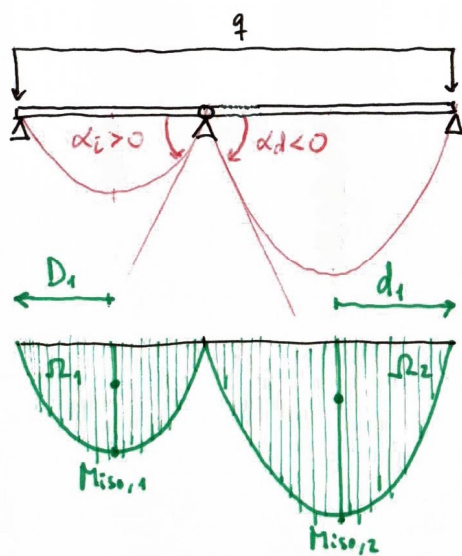
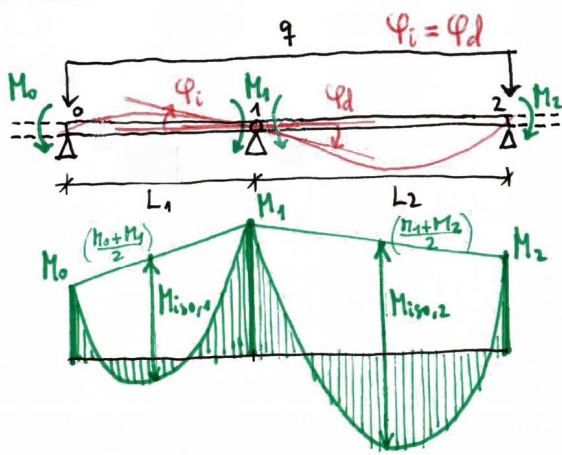
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(III)



Ecuación de los 2 momentos:

$$\delta_0 = 0 \Leftrightarrow \delta_{0 \to 1} = \frac{1}{EI} (S_I + S_{II} + S_{III}) = \frac{1}{EI} \left[ \Omega_1 d_1 + \left( \frac{1}{2} L_1 M_0 \right) \frac{2}{3} L_1 + \left( \frac{1}{2} L_1 M_1 \right) \frac{1}{3} L_1 \right] = 0 \Rightarrow \Omega_1 d_1 + \frac{M_0 L_1^2}{3} + \frac{M_1 L_1^2}{6} = 0 \Rightarrow L_1^2 \left( \frac{2M_0 + M_1}{6} \right) = -\Omega_1 d_1 \Rightarrow \boxed{2M_0 + M_1 = -6 \frac{\Omega_1 d_1}{L_1^2}}$$



Ecuación de los 3 momentos:

$$\varphi_i = \varphi_d \Rightarrow \alpha_i + \beta_{II} + \beta_{III} = -\alpha_d - \beta_{dII} - \beta_{dIII} \Rightarrow \frac{1}{EIL_1} (S_{iI} + S_{iII} + S_{iIII}) = -\frac{1}{EIL_2} (S_{dII} + S_{dIII} + S_{dIV}) \Rightarrow \frac{\Omega_1 d_1 + \left( \frac{1}{2} L_1 M_0 \right) \frac{1}{3} L_1 + \left( \frac{1}{2} L_1 M_1 \right) \frac{2}{3} L_1}{L_1} = -\frac{\Omega_2 d_2 + \left( \frac{1}{2} L_2 M_1 \right) \frac{1}{3} L_2 + \left( \frac{1}{2} L_2 M_2 \right) \frac{2}{3} L_2}{L_2}$$

$$\Rightarrow \frac{\Omega_1 d_1}{L_1} + L_1 \left( \frac{M_0}{6} + \frac{M_1}{3} \right) = -\frac{\Omega_2 d_2}{L_2} - L_2 \left( \frac{M_1}{3} + \frac{M_2}{6} \right) \Rightarrow L_1 \frac{M_0 + 2M_1}{6} + L_2 \frac{2M_1 + M_2}{6} = -\frac{\Omega_1 d_1}{L_1} - \frac{\Omega_2 d_2}{L_2} \Rightarrow L_1 M_0 + 2L_1 M_1 + 2L_2 M_1 + L_2 M_2 = -6 \left( \frac{\Omega_1 d_1}{L_1} + \frac{\Omega_2 d_2}{L_2} \right) \Rightarrow \boxed{L_1 M_0 + 2(L_1 + L_2) M_1 + L_2 M_2 = -6 \left( \frac{\Omega_1 d_1}{L_1} + \frac{\Omega_2 d_2}{L_2} \right)}$$