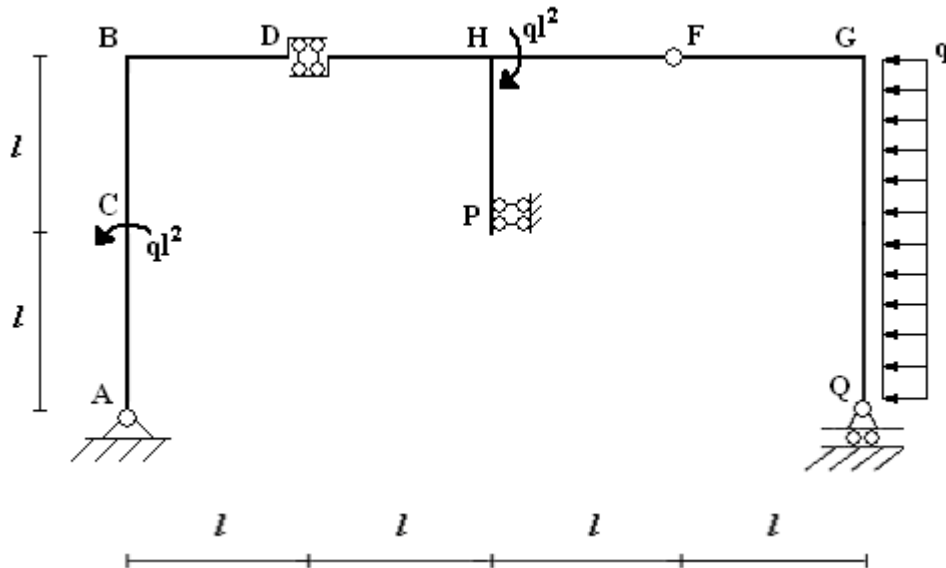
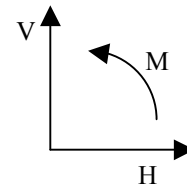


**Calcolare le reazioni vincolari e tracciare i diagrammi
quotati delle caratteristiche della sollecitazione .**

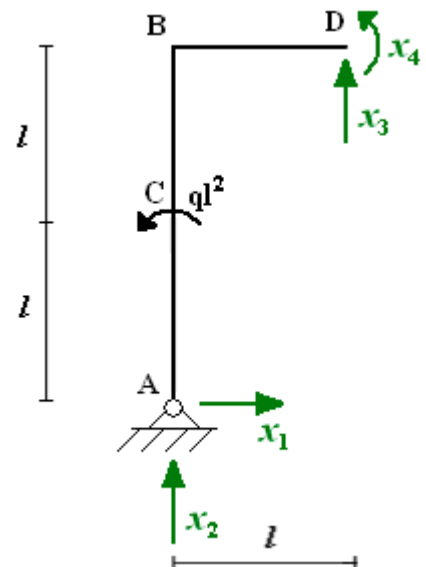


Utilizzando il metodo generale dell'isolamento per tronchi ,
applicando le equazioni cardinali della statica si ha :



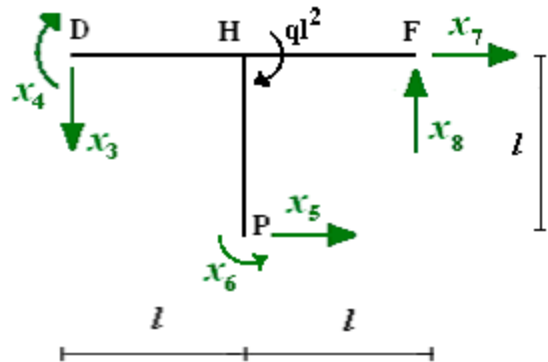
I° Tronco :

$$\left\{ \begin{array}{l} \sum_H : x_1 = 0 \\ \sum_V : x_2 + x_3 = 0 \\ \sum_M(A) : x_3 \cdot l + x_4 + ql^2 = 0 \end{array} \right.$$



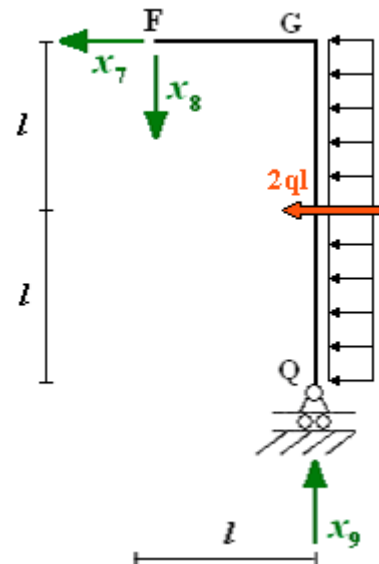
II° Tronco :

$$\begin{cases} \sum_H : x_5 + x_7 = 0 \\ \sum_V : -x_3 + x_8 = 0 \\ \sum_M(P) : -x_4 + x_3 \cdot l + x_6 - ql^2 - x_7 \cdot l + x_8 \cdot l = 0 \end{cases}$$



III° Tronco :

$$\begin{cases} \sum_H : -x_7 - 2ql = 0 \Rightarrow x_7 = -2ql \\ \sum_V : -x_8 + x_9 = 0 \Rightarrow x_9 = 6ql \\ \sum_M(Q) : x_7 \cdot 2l + x_8 \cdot l - 2ql^2 = 0 \Rightarrow x_8 = 6ql \end{cases}$$



Risolvendo , tramite sostituzione , simultaneamente i due sistemi relativi ai primi due tronchi si ha :

$$\begin{cases} \sum_H : x_1 = 0 \\ \sum_V : x_2 + x_3 = 0 \\ \sum_M(A) : x_3 \cdot l + x_4 + ql^2 = 0 \end{cases}, \begin{cases} \sum_H : x_5 + x_7 = 0 \\ \sum_V : -x_3 + x_8 = 0 \\ \sum_M(P) : -x_4 + x_3 \cdot l + x_6 - ql^2 - x_7 \cdot l + x_8 \cdot l = 0 \end{cases}$$

$$x_1 = 0$$

$$x_2 = -2ql$$

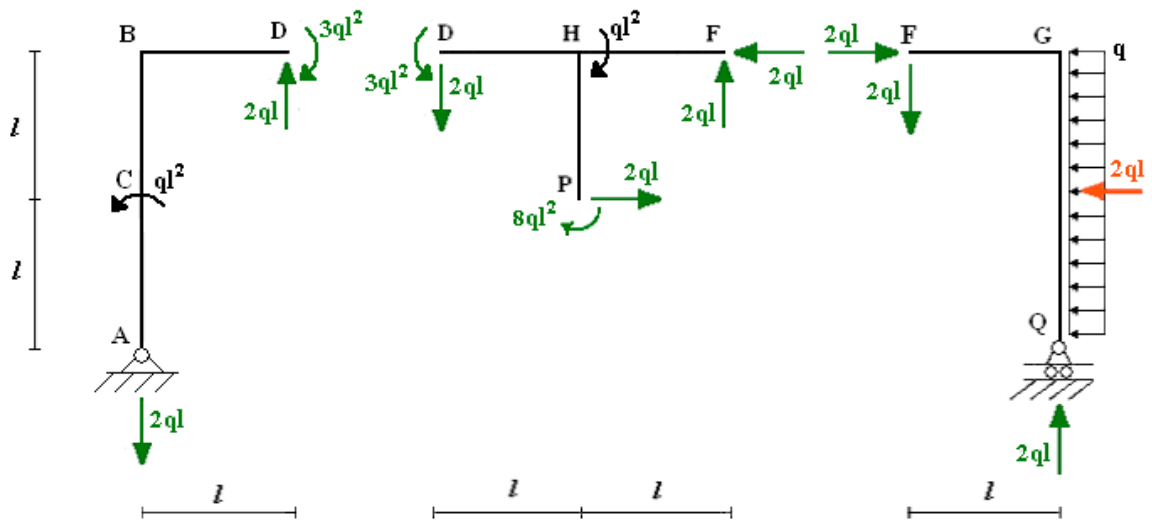
$$x_3 = 2ql$$

$$x_4 = -3ql^2$$

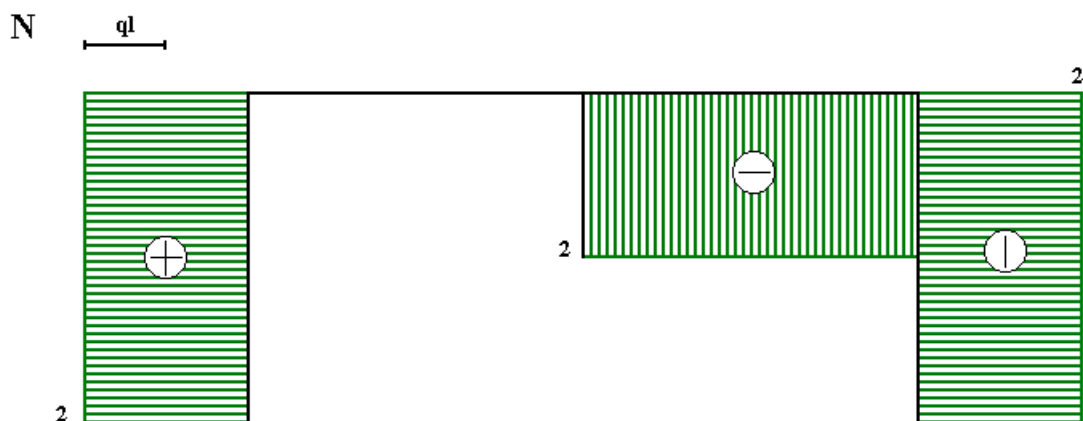
$$x_5 = 2ql$$

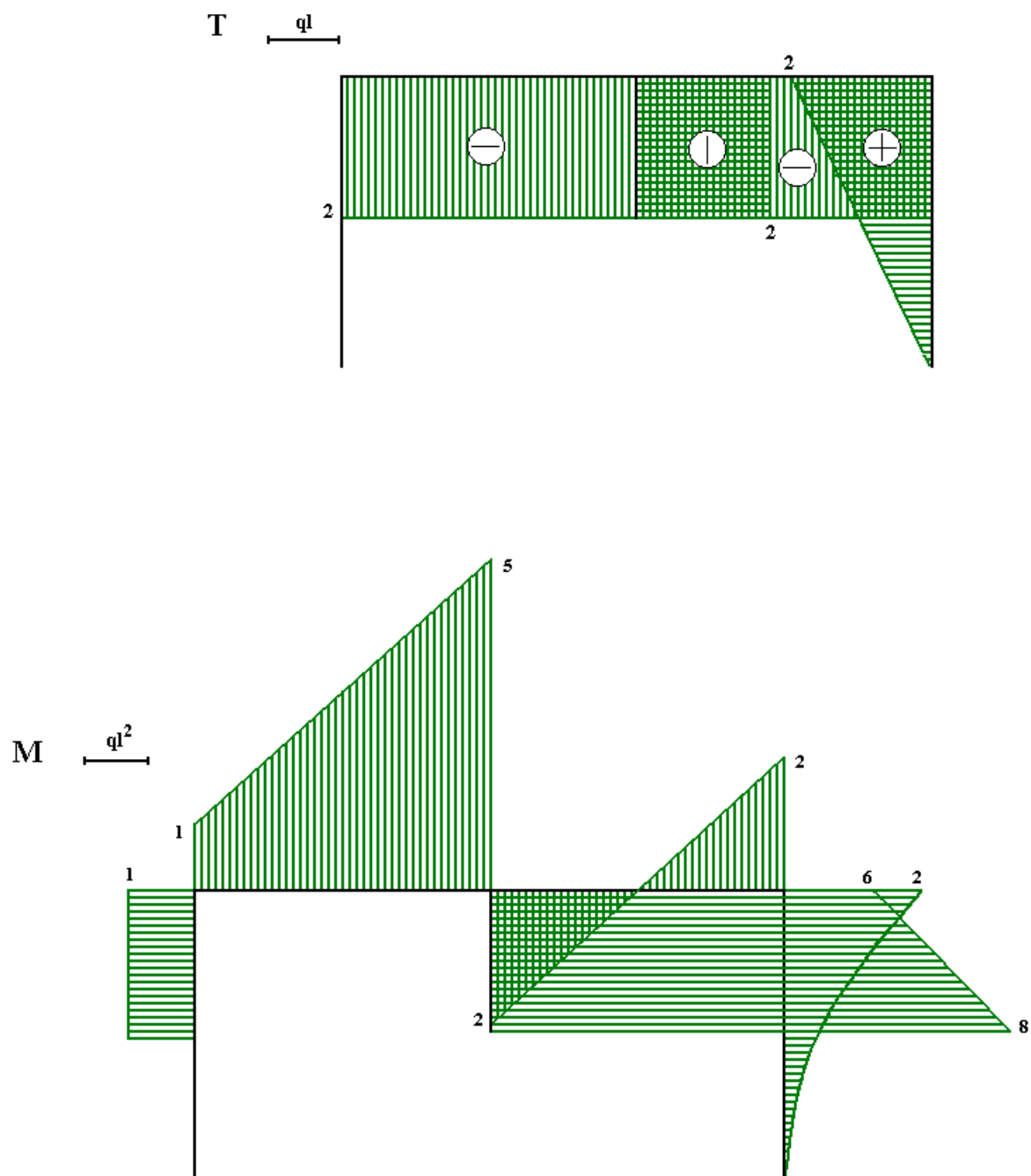
$$x_6 = -8ql^2$$

Riassumendo :

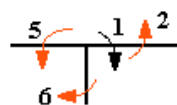


Diagrammi :

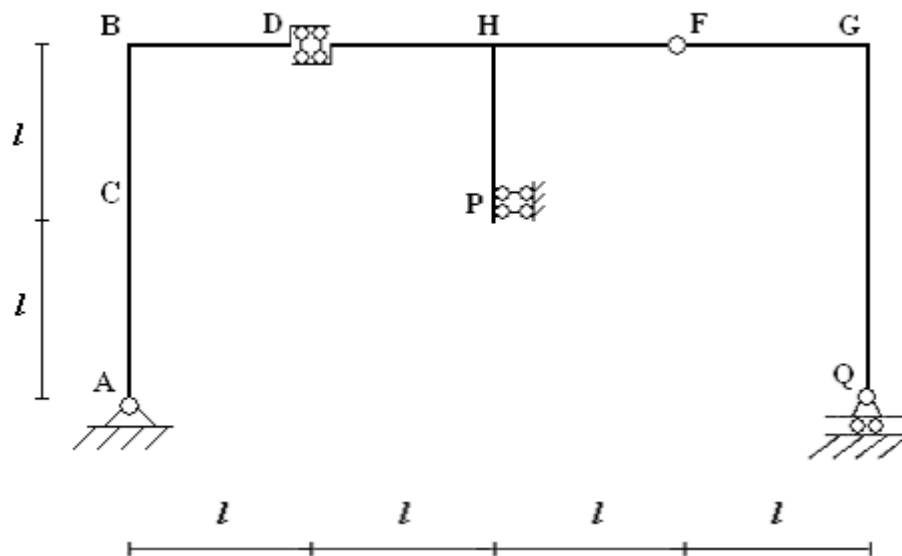




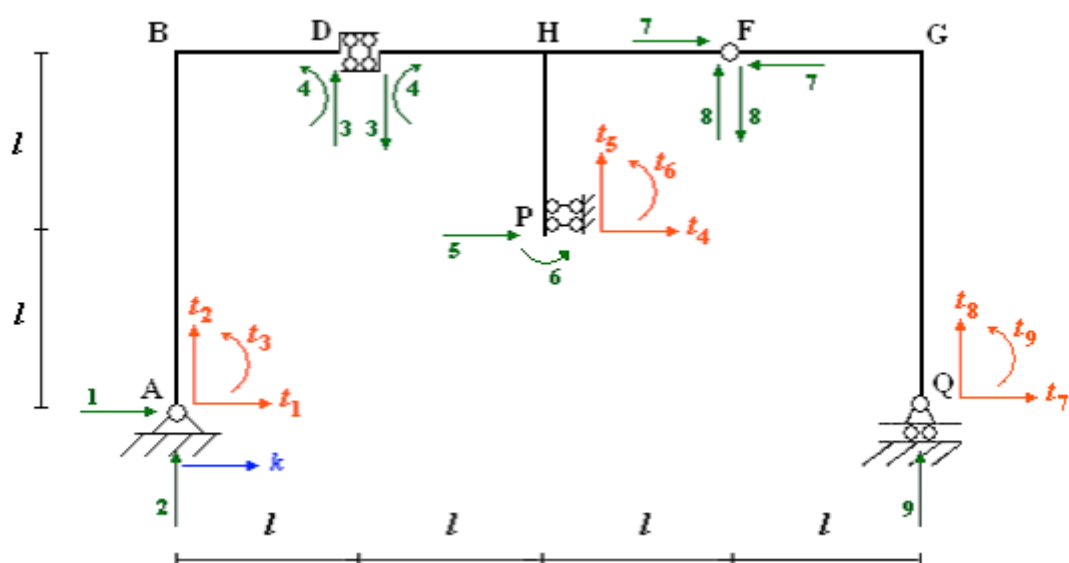
Verifica dell'equilibrio nel punto H



Della struttura sotto definita determinare i diagrammi dello spostamento corrispondenti ad un cedimento vincolare orizzontale , di valore prefissato k , in P .



Impostando il sistema lineare sulla struttura :



$$\begin{cases} dA_1 = k \\ dA_2 = 0 \\ dD_3^I - dD_3^{II} = 0 \\ dD_4^I - dD_4^{II} = 0 \\ dP_5 = 0 \\ dP_6 = 0 \\ dF_7^{II} - dF_7^{III} = 0 \\ dF_8^{II} - dF_8^{III} = 0 \\ dQ_9 = 0 \end{cases} \Rightarrow \begin{cases} t_1 = k \\ t_2 = 0 \\ (t_2 + t_3 \cdot l) - (t_5 + t_6 \cdot (-l)) = 0 \\ t_3 - t_6 = 0 \\ t_4 = 0 \\ t_6 = 0 \\ (t_4 - t_6 \cdot l) - (t_7 - t_9 \cdot (2l)) = 0 \\ (t_5 + t_6 \cdot l) - (t_8 + t_9 \cdot (-l)) = 0 \\ t_8 = 0 \end{cases} \Rightarrow \begin{cases} t_1 = k \\ t_2 = 0 \\ t_3 = 0 \\ t_6 = 0 \\ t_4 = 0 \\ t_5 = 0 \\ t_7 = 0 \\ t_9 = 0 \\ t_8 = 0 \end{cases}$$

Si arriva quindi a :

