

Matter : Advanced dynamic structures.

Serial 4 "Forced vibrations of 1 d.o.f dynamic structures"

Exercise : 1 :

Use the convolution integral to determine the response of an undamped 1 D.O.F. system to the excitation of figure . 1.

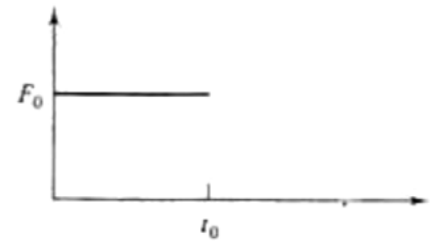


Figure 1

Exercise : 2 :

Consider the gantry shown in figure (3.a) with mass $M=1000$ Kg and equivalent rigidity $K=9100$ KN/m. The posts are of square section and length $L=3$ m. The gantry is subjected to an explosion modeled by a triangular loading $P(t)$ applied at floor level (see figure 3.b). For initial conditions at rest, calculate:

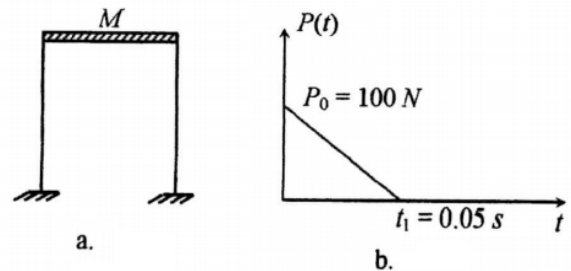


Figure 2

- The response of the gantry?