

Soil Dynamics

Assignment #4

A uniform string stretched between the points $(0,0)$, and $(l,0)$ is given the following initial displacement & velocity

$$u(x,0) = f(x) = \sin \frac{\pi x}{l}, \quad 0 < x < l$$

$$\dot{u}(x,0) = g(x) = \begin{cases} 0 & 0 < x < \frac{l}{4} \\ a & \frac{l}{4} < x < \frac{3l}{4} \\ 0 & \frac{3l}{4} < x < l \end{cases}$$

Find its subsequent displacement as a function of x and t