

Solving the wave eq. Case study.

Consider the wave eq. in 1D.

$$u_{tt} = c^2 u_{xx}, \quad x \in [x_L, x_R], t > 0$$

Partial diff. eq. (PDE)

$$u(x, 0) = g_0(x), \quad u_t(x, 0) = g_1(x)$$

Initial data.

$$u(x_L, t) = b_L(t), \quad u(x_R, t) = b_R(t)$$

Boundary conditions.