Linear Wave Equations

- **Wave Equation** $\dfrac{\partial^2 w}{\partial t^2} = a^2 \dfrac{\partial^2 w}{\partial x^2}$

- **Nonhomogeneous Wave Equation** $\dfrac{\partial^2 w}{\partial t^2} = a^2 \dfrac{\partial^2 w}{\partial x^2} + \Phi(x, t)$

- **Wave Equation with Axial Symmetry** $\dfrac{\partial^2 w}{\partial t^2} = a^2 \left(\dfrac{\partial^2 w}{\partial r^2} + \dfrac{1}{r} \dfrac{\partial w}{\partial r} \right) + \Phi(r, t)$

- **Wave Equation with Central Symmetry** $\dfrac{\partial^2 w}{\partial t^2} = a^2 \left(\dfrac{\partial^2 w}{\partial r^2} + \dfrac{2}{r} \dfrac{\partial w}{\partial r} \right) + \Phi(r, t)$

The EqWorld website presents extensive information on solutions to various classes of ordinary differential equations, partial differential equations, integral equations, functional equations, and other mathematical equations.

http://eqworld.ipmnet.ru/en/solutions/lpde/wave-toc.pdf