Exact Solutions > Linear Partial Differential Equations > Second-Order Hyperbolic Partial Differential Equations

2. Linear Hyperbolic Equations

- 2.1. Wave Equation $\frac{\partial^2 w}{\partial t^2} = a^2 \frac{\partial^2 w}{\partial x^2}$
- 2.2. Nonhomogeneous Wave Equation $\frac{\partial^2 w}{\partial t^2}=a^2\frac{\partial^2 w}{\partial x^2}+\Phi(x,t)$
- 2.3. Klein–Gordon Equation $\frac{\partial^2 w}{\partial t^2} = a^2 \frac{\partial^2 w}{\partial x^2} bw$
- 2.4. Nonhomogeneous Klein–Gordon Equation $\frac{\partial^2 w}{\partial t^2} = a^2 \frac{\partial^2 w}{\partial x^2} bw + \Phi(x,t)$
- 2.5. Wave Equation of the Form $\frac{\partial^2 w}{\partial t^2} = a^2 \left(\frac{\partial^2 w}{\partial r^2} + \frac{1}{r} \frac{\partial w}{\partial r} \right) + \Phi(r,t)$
- 2.6. Wave Equation of the Form $\frac{\partial^2 w}{\partial t^2} = a^2 \left(\frac{\partial^2 w}{\partial r^2} + \frac{2}{r} \frac{\partial w}{\partial r} \right) + \Phi(r,t)$
- 2.7. Telegraph Equation $\frac{\partial^2 w}{\partial t^2} + k \frac{\partial w}{\partial t} = a^2 \frac{\partial^2 w}{\partial x^2} + bw$

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.

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