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Initial value problems and first boundary problems for a class of quasilinear wave equations.

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Summary: The initial value problems and the first boundary problems for the quasilinear wave equation

$$u_{tt} - [a_0 + na_1(u_x)^{n-1}]u_{xx} - a_2u_{xxtt} = 0$$

are considered, where $a_0, a_2 > 0$ are constants, a_1 is an arbitrary real number, n is a natural number. The existence and uniqueness of classical solutions are proved by the Galerkin method.

MSC:

35L70 Second-order nonlinear hyperbolic equations

35A05 General existence and uniqueness theorems (PDE) (MSC2000)

Cited in 4 Documents

Keywords:

Galerkin method

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