

Chen, Guowang; Wang, Shubin**Existence and non-existence of global solutions for nonlinear hyperbolic equations of higher order.** (English) [Zbl 0839.35085](#)

Commentat. Math. Univ. Carol. 36, No. 3, 475-487 (1995).

The authors prove the existence and uniqueness of a classical local solution and classical global solution and blow up of the solution for the equation $u_{tt} - au_{xx} - bu_{xxt} = f(u_x)_x$ satisfying Dirichlet or Neumann boundary conditions. The results are applied to the equation of nonlinear waves in elastic rod, where $f(s) = sn$.

Reviewer: [M.Kopáčková \(Praha\)](#)**MSC:**

- [35L75](#) Higher-order nonlinear hyperbolic equations
- [74H45](#) Vibrations in dynamical problems in solid mechanics
- [74K10](#) Rods (beams, columns, shafts, arches, rings, etc.)

Cited in **5** Documents**Keywords:**[global solution](#); [blow up](#)**Full Text:** [EuDML](#)