



**GLOBAL EXISTENCE AND BLOW UP OF SOLUTIONS FOR
WAVE EQUATION WITH NONLINEAR BOUNDARY
DAMPING AND SOURCE TERM UNDER
CRITICAL ENERGY**

Xiangkun Kong and Yu Tao

Received August 28, 2016

Abstract

In this paper, we study the initial boundary value problem of wave equations with nonlinear source and boundary damping terms. However, the classical methods used to study qualitative studies are no longer entirely applicable. We concern with the global existence and blow-up solution under critical initial energy. Then we prove that all the results still hold in extended assumptions by using potential well and Sobolev embedding theory.

Keywords and phrases: nonlinear wave equation, potential well, global existence solution, blow-up.