Modelling and Energy decay for the nonlinear quasi-linear wave equation with mixed boundary condition

Daewook Kim [1]

1) *Institute of Mathematical Sciences(IMS), Pusan National University, Pusan 609-735, KOREA*

Corresponding Author : Daewook Kim, kdw@pusan.ac.kr

ABSTRACT

In this talk, I introduce the mathematical modelling for the nonlinear quasi-linear wave equation with mixed boundary condition. Next, I give the mathematical proof of decay rates for the system from the modelling. Finally, by using the simulation, I test the energy decay rates for a special example of the system.

REFERENCES

1. D. Kim, I. H. Jung, *Asymptotic behavior of a nonlinear Kirchhoff type equation with spring boundary conditions*, Comput. Math. Appl., **62** (2011) 3004-3014.
2. D. Kim, S. Kim and I. H. Jung, *Stabilization for the Kirchhoff type equation from an axially moving heterogeneous string modeling with boundary feedback control*, Nonlinear Anal.-Theor., **75** (2012) 3598-3617.
3. D. Kim, Y. H. Kang, J. B. Lee, G. R. Ko and I. H. Jung, *Stabilization for a nonlinear Kirchhoff equation by boundary feedback control*, J. Eng. Math., **77** (2012) 197-209.