

# General decay for weak viscoelastic equation of Kirchhoff type containing Balakrishnan-Taylor damping with nonlinear delay and acoustic boundary conditions

Mi Jin Lee<sup>1</sup>, Jong-Yeoul Park<sup>1</sup>, and Jum-Ran Kang<sup>2</sup>

<sup>1</sup>Pusan National University

<sup>2</sup>Pukyong National University

February 23, 2021

## Abstract

In this paper, we consider the general energy decay for weak viscoelastic equation of Kirchhoff type containing Balakrishnan-Taylor damping with nonlinear delay and acoustic boundary conditions. By introducing suitable energy and Lyapunov functionals, we establish the general decay estimates for the energy, which depends on the behavior of both  $\sigma$  and  $g$ .

## Hosted file

nonlinear time delay varying-2020-MMAS.pdf available at <https://authorea.com/users/397512/articles/510365-general-decay-for-weak-viscoelastic-equation-of-kirchhoff-type-containing-balakrishnan-taylor-damping-with-nonlinear-delay-and-acoustic-boundary-conditions>

## Hosted file

nonlinear time delay varying-2020-MMAS.tex available at <https://authorea.com/users/397512/articles/510365-general-decay-for-weak-viscoelastic-equation-of-kirchhoff-type-containing-balakrishnan-taylor-damping-with-nonlinear-delay-and-acoustic-boundary-conditions>