

**Dear Editor-in-Chief of Siberian Electronic Mathematical Reports**

Professor A. Yu. Vesnin,

I would like to submit my paper with the title "Blow-up analysis for a class of plate viscoelastic  $p(x)$ -Kirchhoff type inverse source problem with variable-exponent nonlinearities" to your journal: Siberian Electronic Mathematical Reports. This work results from a collaboration with Professor Jorge Ferreira, Department of Mathematics, Federal Fluminense University, Volta Redonda, Brazil, and Professor Erhan Pişkin from Dicle University, Department of Mathematics, Diyarbakir, Turkey, and Professor Nouri Boumaza from Larbi Tebessi University, Department of Mathematics and Computer Science, Tebessa, Algeria.

In this work, we study the blow-up analysis for a class of plate viscoelastic  $p(x)$ -Kirchhoff type inverse source problem of the form:

$$u_{tt} + \Delta^2 u - \left( a + b \int_{\Omega} \frac{1}{p(x)} |\nabla u|^{p(x)} dx \right) \Delta_{p(x)} u - \int_0^t g(t - \tau) \Delta^2 u(\tau) d\tau + \beta |u_t|^{m(x)-2} u_t = \alpha |u|^{q(x)-2} u + f(t) \omega(x).$$

Under suitable conditions on kernel of the memory, initial data and variable exponents, we prove the blow up of solutions in two cases: linear damping term ( $m(x) \equiv 2$ ) and nonlinear damping term ( $m(x) > 2$ ). Precisely, we show that the solutions with positive initial energy blow up in a finite time when  $m(x) \equiv 2$  and blow up at infinity if  $m(x) > 2$ . To the best of our knowledge, this is the first work that deals with blow-up of solutions to problems involving fourth-order viscoelastic  $p(x)$ -Kirchhoff type inverse source problem with variable exponent nonlinearities. This work improves and extends many other results in the literature.

It will be appreciated if you consider this paper and inform us about the referee's report.

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With my best regards.

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