

Well-posedness and exponential stability of the Kawahara equation with a time-delayed localized damping

Boumediène Chentouf¹

¹Kuwait University

January 17, 2022

Abstract

The aim of this article is to investigate the well-posedness and stability problems of the so-called Kawahara equation under the presence of an interior delayed damping. The system is shown to be well-posed. Furthermore, we prove that the trivial solution is exponentially stable in spite of the delay effect. Specifically, local and semi-global stability results are established according to the properties of the spatial distribution of the delay term.

Hosted file

kawa int delay.pdf available at <https://authorea.com/users/455750/articles/553028-well-posedness-and-exponential-stability-of-the-kawahara-equation-with-a-time-delayed-localized-damping>