

# **The ADM method for solving the modified kawahara equation with fractional spatial and temporal derivatives**

Maamar Benbachir\*

*Faculty of Sciences and Technology  
Bechar University  
Bechar  
Algeria*

Zoubir Dahmani

*Laboratory LMPA  
Faculty of Exacte Sciences  
UMAB University of Mostaganem  
Algeria*

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## **Abstract**

In this paper, by introducing the fractional derivative in the sense of Caputo, we apply the Adomian decomposition method (ADM) to solve the modified Kawahara equation with fractional derivatives. Two cases of special interest such as the temporal-fractional modified Kawahara eqaution and the spatial-fractional modified Kawahara equation are discussed in details. Further, we compare the obtained results with those obtained for integer derivatives.

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