

Solving a Second Order Fuzzy Initial Value Problem Using Heaviside Function

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ABSTRACT.

In this paper, we reformulate the algorithm in [19] to find an analytical expression for α -cuts of the solution of the second order nonhomogeneous fuzzy initial value problem with fuzzy initial values and fuzzy forcing terms. Firstly, we apply Zadeh's Extension Principle to fuzzify the crisp initial value problem. Then, we use the Heaviside function and obtain the analytical form of α -cuts of the solution of the fuzzy initial value problem. Finally, we illustrate some examples by using the proposed algorithm.

KEYWORDS: Fuzzy Initial Value Problem, Fuzzy Forcing Function, Zadeh's Extension Principle, Heaviside Function, Breaking Point, Structure Vector.

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