

عنوان مقاله:

Upper and lower solutions for fractional integro-differential equation of higher-order and with nonlinear boundary conditions

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خلاصه مقاله:

This paper delves into the identification of upper and lower solutions for a high-order fractional integro-differential equation featuring non-linear boundary conditions. By introducing an order relation, we define these upper and lower solutions. Through a rigorous approach, we demonstrate the existence of these solutions as the limits of sequences derived from carefully selected problems, supported by the application of Arzelà-Ascoli's theorem. To illustrate the significance of our findings, we provide an illustrative example. This research contributes to a deeper understanding of solutions in the context of complex fractional integro-differential equations.

کلمات کلیدی:

Arzelà-Ascoli's theorem, Caputo fractional derivative, Integro-differential equation, Nonlinear boundary conditions

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