

ON CRITERIA OF EXISTENCE FOR NONLINEAR KATUGAMPOLA FRACTIONAL DIFFERENTIAL EQUATIONS WITH p -LAPLACIAN OPERATOR

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Abstract. This paper is devoted to establishing vital criteria of existence and uniqueness for a class of nonlinear Katugampola fractional differential equations (KFDEs) with p -Laplacian operator subjecting to mixed boundary conditions. The reasoning is inspired by diverse classical fixed point theory, such as the Guo-Krasnosel'skii type fixed point principle and Banach contraction theorem. Additionally, several expressive examples are afforded to show the effectiveness of our theoretical results.

Mathematics subject classification (2020): 26A03, 34A12, 37C25.

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