

EXISTENCE SOLUTIONS OF NONLINEAR FRACTIONAL INTEGRAL EQUATIONS WITH VARIABLE ORDER OF THE VOLTERRA TYPE WITH A NEW APPROACH

Kheireddine Benia, Zoubida Bouazza, Mohammed Said Souid

***Abstract.** In this paper, we use a new approach to study the existence, uniqueness, and stability of solutions to a non-linear Volterra fractional integral equation with variable order under less restrictive presumptions. Finally, to illustrate the results of this work, we give an example which illustrate the applicability of our approach.*

Key words: Existence results for non-linear fractional integral equations of variable-order, Volterra integral equation, fixed point theorem, Ulam-Hyers stability.

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Kheireddine Benia¹, Zoubida Bouazza², Mohammed Said Souid³

¹ Departement of Mathematics, Ibn khaldoun university,
Tiaret, Algeria, kheireddine.benia@univ-tiaret.dz

² Department of informatics, University of Tiaret,
Algeria, bouazza3@yahoo.fr

³ Department of Economic Sciences, Ibn khaldoun university,
Tiaret, Algeria

Corresponding author: souimed2008@yahoo.com