Sufficient conditions on existence of solution for nonlinear fractional iterative integral equation

ABSTRACT

In this article, we study nonlinear quadratic iterative integral equations and establish sufficient conditions for the existence of Volterra solutions for fractional iterative integral equations and solvency in Banach space and $C\ell,\beta$. In the present work we use the principle of contraction, Schaefer's fixed point theorem and the non-expansive operator method as essential tools. In this study we consider Riemann-Liouville differential operator and prove some related theorems, further provide an example as an application.

Keyword: Fractional integral equation; Existence of solution; Schaefer's fixed point theorem; Non-expansive operator