

Biological experiments based on fractional integral equations

ABSTRACT

This paper deals with modeling of mathematical biological experiments using the iterative fractional integral equations following type (1) $w(u) = h(u) + \int_0^u (u-r)^{\beta} \Gamma(\beta+1) K(r, w(r)) dr$ (1) where $u_0, u \in [a, b]$, $w, h \in C([a, b] \times [a, b])$, $K \in C([a, b] \times [a, b])$. We propose that the mathematical model (1) containing the iterative integral of fractional order that is the best method in the studying this field. We establish the existence and uniqueness solutions for fractional iterative integral equation by using the technique function h non-expansive mappings. Also, we show the results of the system of fractional iterative integral equation by using the technique of non-expansive operators.