

An application on the second-order generalized difference equations

ABSTRACT

In this paper, we study the solutions of the second-order generalized difference equation having the form of $\Delta^2 \ell u(k) + f(k, u(k)) = 0$, $k \in [a, \infty)$, $a > 0$, $\ell \in (0, \infty)$, (1) where $\Delta \ell u(k) = u(k + \ell) - u(k)$. Then we provide applications on $\ell^2(\ell)$ and $c\alpha(\ell)$.

Keyword: Finite series and infinite series; Generalized difference equation; Generalized difference operator.