

Higher order discrete equations with deviated argument

Natia khachidze

Roman koplataдзе

e-mail: natia.khachidze988@ens.tsu.edu.ge

department of mathematics, faculty of exact and natural sciences, ivane javakhishvili Tbilisi
state university

Georgia, Tbilisi, Chavchavadze street #2

anotation

The present deals asymptotic behavior of solutions of higher order essentially nonlinear difference equations. Properties of monotone sequences and lemas has been represented, which are used to get main results. Necessary probes of availability of positive solutions has been estimated. The classes of difference equations has been found, which have so called property A and property B. Higher order difference equation with deviated argument has been discussed

$$\Delta^{(n)} u(k) + p(k) |u(\sigma(k))|^{\lambda} \text{sign}(u(\sigma(k))) = 0$$

where $n \geq 2$, $0 < \lambda < 1$, $p: N \rightarrow R$, $\sigma: N \rightarrow N$, $\lim_{k \rightarrow \infty} \sigma(k) = +\infty$, $u: N \rightarrow R$.