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Oscillation properties for a scalar linear difference equation of mixed type. (English)

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The authors consider the linear difference equation of mixed type

$$\Delta x(n) + \sum_{k=-p}^q a_k(n)x(n+k) = 0,$$

where $\{a_k(n)\}$ are sequences of real numbers for $k = -p, \dots, q$, and $p > 0, q \geq 0$. Various kinds of sufficient conditions which guarantee that all solutions of this equation are oscillatory are established. Nonoscillatory criteria are also proved. The final section is devoted to deriving the conditions for all positive solutions to tend to zero.

Reviewer: [Pavel Rehak \(Brno\)](#)

MSC:

39A21 Oscillation theory for difference equations

Cited in **2** Documents

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delayed difference equation; oscillation theory

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