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Standard sequence subgroups in finite fields. (English) [Zbl 1355.11107]


Summary: In previous work, the authors [Finite Fields Appl. 15, No. 1, 40–53 (2009; Zbl 1213.11194) and articles cited therein] described certain configurations which give rise to standard and to non-standard subgroups for linear recurrences of order \( k = 2 \), while in subsequent work [Finite Fields Appl. 16, No. 3, 187–203 (2010; Zbl 1195.11157)], a number of families of non-standard subgroups for recurrences of order \( k \geq 2 \) are described. Here we exhibit two infinite families of standard groups for \( k \geq 2 \).

MSC:

11T30 Structure theory for finite fields and commutative rings (number-theoretic aspects)
11B39 Fibonacci and Lucas numbers and polynomials and generalizations
12E20 Finite fields (field-theoretic aspects)

Keywords:

linear recurrence relation; finite field; standard subgroup; restricted period

Full Text: DOI

References:

[9] Somer, L. E., The Fibonacci group and a new proof that \( \left( \frac{p - (5 / p)}{p} \right) \equiv 0 \pmod{p} \), Fibonacci Q., 10, 345-348, (1972), 354

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