Guo, Ji; Sun, Chia-Liang; Wang, Julie Tzu-Yueh
On Pisot’s $d$-th root conjecture for function fields and related GCD estimates. (English)
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Summary: We propose a function-field analog of Pisot’s $d$-th root conjecture on linear recurrences, and prove it under some “non-triviality” assumption. Besides a recent result of Pasten-Wang on Büchi’s $d$-th power problem, our main tool, which is also developed in this paper, is a function-field analog of a GCD estimate in a recent work of Levin and Levin-Wang. As an easy corollary of such a GCD estimate, we also obtain an asymptotic result.

MSC:
14H05 Algebraic functions and function fields in algebraic geometry
11D61 Exponential Diophantine equations
11B37 Recurrences

Keywords:
Pisot’s $d$-th root conjecture; function fields; linear recurrences; GCD estimates

Full Text: DOI

References:
[1] Ailon, N.; Rudnick, Z., Torsion points on curves and common divisors of $\mathbf{\langle a^k - 1 \rangle}$ and $\mathbf{\langle b^k - 1 \rangle}$, Acta Arith., 113, 1, 31-38 (2004) · Zbl 1057.11018