Agnihotri, Rishabh; Chakraborty, Kalyan
Sign changes of certain arithmetical function at prime powers. (English) Zbl 07442487

Summary: We examine an arithmetical function defined by recursion relations on the sequence \( \{f(p^k)\}_{k \in \mathbb{N}} \) and obtain sufficient condition(s) for the sequence to change sign infinitely often. As an application we give criteria for infinitely many sign changes of Chebyshev polynomials and that of sequence formed by the Fourier coefficients of a cusp form.

MSC:
11A25 Arithmetic functions; related numbers; inversion formulas
11M38 Zeta and \( L \)-functions in characteristic \( p \)
11B39 Fibonacci and Lucas numbers and polynomials and generalizations
11F30 Fourier coefficients of automorphic forms

Keywords:
arithmetic function; Dirichlet series; Chebyshev polynomial; modular form

Full Text: DOI