

Katsurada, Masanori

Linear independence measures for values of Heine series. (English) Zbl 0653.10031

Math. Ann. 284, No. 3, 449-460 (1989).

Let n, N, d be integers with $0 \leq N \leq n < d$ and let $q, b_{N+1}, \dots, b_n \in \mathbb{C}$ satisfy $0 < |q| < 1$ and $b_j \neq q^0, q^{\pm 1}, q^{\pm 2}, \dots$ ($N+1 \leq j \leq n$). Let $f(z)$ denote the entire function defined by the series

$$\sum_{k=0}^{\infty} \frac{q^{dk(k-1)/2}}{Q(q^{-k})Q(q^{-k+1})\dots Q(q^{-1})} z^k,$$

where $Q(x) := (1 - q^{\beta_1}x)\dots(1 - q^{\beta_N}x)(1 - b_{N+1}x)\dots(1 - b_n x)$ with $\beta_1, \dots, \beta_N \in \{1, 2, \dots\}$. Then using the method of Padé approximation, we obtain the linear independence measures for the values of $f(z)$ as well as its derivatives of any order. It is an improvement of the earlier result of *Th. Stihl* [Math. Ann. 268, 21-41 (1984; Zbl 0519.10024)].

Reviewer: M.Katsurada

MSC:

11J81 Transcendence (general theory)

11J85 Algebraic independence; Gel'fond's method

Cited in **2** Reviews

Cited in **5** Documents

Keywords:

entire function; linear independence measures; values; derivatives

Full Text: [DOI](#) [EuDML](#)

References:

- [1] Katsurada, M.: Linear independence measures for certain numbers. Result. Math.14, 318-329 (1988) · [Zbl 0659.10039](#)
- [2] Mahler, K.: Perfect systems. Compos. Math.19, 95-166 (1968) · [Zbl 0168.31303](#)
- [3] Stihl, T.: Arithmetische Eigenschaften spezieller Heinescher Reihen. Math. Ann.268, 21-41 (1984) · [Zbl 0533.10031](#) · [doi:10.1007/BF01463871](#)

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.