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

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

where $Q(x) := (1 - q^{\beta_1}x)...(1 - q^{\beta_N}x)(1 - b_{N+1}x)...(1 - b_n\ x)$ with $\beta_1, ..., \beta_N \in \{1, 2, ...\}$. 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)].

<div align="right">Reviewer: M.Katsurada</div>

MSC:

11J81	Transcendence (general theory)
11J85	Algebraic independence; Gel'fond's method

<div align="right">Cited in **2** Reviews
Cited in **5** Documents</div>

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