

Trjitzinsky, W. J.

Analytic theory of linear q -difference equations. (English) Zbl 0007.21103
Acta Math. 61, 1-38 (1933).

For a scan of this review see the [web version](#).

Cited in **1** Review
Cited in **47** Documents

Keywords:

[difference equations](#)

Full Text: [DOI](#)

References:

- [1] The author began this work while he was a National Research Fellow at Harvard University.
- [2] R. D. Carmichael, The general theory of linear q -difference equations. *Amer. Journ. Math.*, Vol. 34 (1912), pp. 147–168. This paper will be referred to as (C). G. D. Birkhoff, The Generalized Riemann Problem for Linear Differential Equations and the Allied Problems for Linear Difference and q -Difference Equations, *Proc. Am. Acad. Arts and Sciences*, vol. 49 (1914), pp. 521–568. This paper will be referred to as (B). · [Zbl 43.0411.02](#) · [doi:10.2307/2369887](#)
- [3] He supposes also that no root of (2) is equal to the product of another by an integral power of q . This restriction, however, is not fundamental.
- [4] C. R. Adams, On the Linear Ordinary q -Difference Equation, *Annals of Math.*, vol. 30, No. 2, April, 1929, pp. 195–205. This paper will be referred to as (A). · [Zbl 55.0263.01](#) · [doi:10.2307/1968274](#)
- [5] G. D. Birkhoff and W. J. Trjitzinsky, Analytic Theory of Singular Difference Equations, *Acta mathematica*, 60: 1–2, pp. 1–89, hereafter referred to as (BT)
- [6] The case when $|q|=1$ has been satisfactorily treated in (C).
- [7] It will be said that $g_1(x), g_2(x), \dots, g_n(x)$ are linearly independent if the determinant $|(g_j(q^i x))_{\beta}|$ is not identically zero.
- [8] Cf. (C).
- [9] Cf. (BT; $\{S\} 1; (6), (6a)$). · [Zbl 34.0569.01](#)
- [10] Cf. (BT; $\{S\} 3; (9), (9a), (10)$). For $q=1$ we have the system (8).
- [11] The latter condition is assumed only for convenience.
- [12] Unless stated to the contrary, asymptotic relations are taken in the ordinary sense, that is, to infinitely many terms.
- [13] Compare with certain analogous situations in (BT).
- [14] Provided that the coefficients of the equation are of the nature, in the vicinity of $x=$ specified in $\{S\} 1$.
- [15] This follows by the reasoning employed in (BT) for an analogous purpose.

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.