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Koepf, Wolfram; Rajković, Predrag M.; Marinković, Sladjana D.

Properties of q -holonomic functions. (English)

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The authors examine the properties of q -holonomic functions which are defined as solutions of linear q -difference equations with polynomial coefficients. For instance, the sum, product and the composition with power functions of q -holonomic functions are also q -holonomic functions.

The paper can be understood as a continuation of the works of *W. Koepf* and *D. Schmersau* [Spaces of functions satisfying simple differential equations, Konrad-Zuse-Zentrum Berlin (ZIB), Technical Report TR 94-2 (1994)] and of *B. Salvy* and *P. Zimmermann* [ACM Trans. Math. Softw. 20, No. 2, 163–177 (1994; Zbl 0888.65010)].

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Keywords : q -difference equation

Classification :

***39A13** Difference equations, scaling (q -differences)

33D15 Basic hypergeometric functions of one variable