



The orthogonality of q -classical polynomials of the Hahn class: A geometrical approach

R. Alvarez-Nodarse, R. Sevinik-Adiguzel, H. Taseli

(Submitted on 12 Jul 2011 (v1), last revised 9 Mar 2012 (this version, v4))

The idea of this review article is to discuss in a unified way the orthogonality of all positive definite polynomial solutions of the q -hypergeometric difference equation on the q -linear lattice by means of a qualitative analysis of the q -Pearson equation. Therefore, our method differs from the standard ones which are based on the Favard theorem, the three-term recurrence relation and the difference equation of hypergeometric type. Our approach enables us to extend the orthogonality relations for some well-known q -polynomials of the Hahn class to a larger set of their parameters.

Subjects: **Classical Analysis and ODEs (math.CA)**

MSC classes: 33D45, 42C05

Cite as: **arXiv:1107.2423v4 [math.CA]**

Submission history

From: Renato Alvarez-Nodarse [[view email](#)]

[\[v1\]](#) Tue, 12 Jul 2011 21:55:33 GMT (57kb)

[\[v2\]](#) Fri, 29 Jul 2011 08:20:05 GMT (57kb)

[\[v3\]](#) Thu, 1 Mar 2012 10:53:54 GMT (89kb)

[\[v4\]](#) Fri, 9 Mar 2012 10:00:29 GMT (89kb)

[Which authors of this paper are endorsers?](#)

Link back to: [arXiv](#), [form interface](#), [contact](#).

Download:

- [PDF](#)
- [PostScript](#)
- [Other formats](#)

Current browse context:

math.CA

[< prev](#) | [next >](#)

[new](#) | [recent](#) | [1107](#)

Change to browse by:

[math](#)

References & Citations

- [NASA ADS](#)

Bookmark([what is this?](#))

