On some multiple orthogonal polynomials of a discrete variable

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Time: Monday 22.07., 16:30 - 17:00, Room HS 3

Abstract: This presentation deals with algebraic and analytic properties of some discrete multiple orthogonal polynomials. First, introduce some special families of multiple orthogonal polynomials that are q-analogous to discrete families given in [2]. Second, the raising and lowering operators, Rodrigues-type formula, and recurrence relations are discussed. Last, a connection with physical model involving weakly integrable systems [3] as well as with the weak asymptotics [1] for the studied families of multiple orthogonal polynomials will be shown.

This is a joint work with A. M. Ramírez-Aberasturis.

[1] A. I. Aptekarev, J. Arvesú, *Asymptotics for multiple Meixner polynomials*, J. Math. Anal. Appl. **411** (2014), 485–505.

[2] J. Arvesú, J. Coussement, W. Van Assche, *Some discrete multiple orthogonal polynomials*, J. Comput. Appl. Math. **153** (2003), 19–45.

[3] H. Miki, S. Tsujimoto, L. Vinet, A. Zhedanov, *An algebraic model for the multiple Meixner polynomials of the first kind*, J. Phys. A: Math. Theor. **45** (2012), 325205 (11 pp).