EXTENSION OF MULTIPLE ORTHOGONALITY TO THE BIVARIATE CASE

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Abstract

Multiple Orthogonal Polynomials (MOPs) in a single variable generalize the standard theory by satisfying orthogonality conditions with respect to several measures, and they hold significant importance in various applications, including Hermite-Padé rational approximation, random matrix theory, and integrable systems.

However, multiple orthogonality has been explored mainly in the univariate case. In this talk, I will start by presenting some preliminaries on multiple orthogonality in the univariate case, followed by some definitions of the two main types of multiple orthogonality, examples and extended results, closing with a discussion on the relation between the univariate and bivariate cases.

Keywords: Orthogonal Polynomials, Approximation Theory, Applications, Multiple orthogonality.
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