Bernstein–Szegő polynomials on the triangle

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In this work we consider the extension of the one variable Bernstein–Szegő theory for orthogonal polynomials on the real line (see [3]) to bivariate measures supported on the triangle. A similar problem for measures supported in the square was studied in [1].

Following essentially [2] the orthogonal polynomials and the corresponding kernel functions are constructed. Finally, some asymptotic results concerning the Christoffel functions are obtained.

References

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[2] C. F. Dunkl and Y. Xu, Orthogonal polynomials of several variables, Encyclopedia of Mathematics and its Applications 81. Cambridge University Press, Cambridge, 2001.

[3] G. Szegő, Orthogonal polynomials, 4th ed., American Mathematical Society Colloquium Publication 23, Providence RI, 1978.