

Editorial

# Special Issue Editorial “Special Functions and Polynomials”

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**Abstract:** This Special Issue contains 14 articles from the MDPI journal *Symmetry* on the general subject area of “Special Functions and Polynomials”, written by scholars belonging to different countries of the world. A similar number of submitted articles was not accepted for publication. Several successful Special Issues on the same or closely related topics have already appeared in MDPI’s *Symmetry*, *Mathematics* and *Axioms* journals, in particular those edited by illustrious colleagues such as Hari Mohan Srivastava, Charles F. Dunkl, Junesang Choi, Taekyun Kim, Gradimir Milovanović, and many others, who testify to the importance of this matter for its applications in every field of mathematical, physical, chemical, engineering and statistical sciences. The subjects treated in this Special Issue include, in particular, the following Keywords.

**Keywords:** hypergeometric functions and their  $k$ -analogue; matrix functions and matrix polynomials; Riemann–Liouville fractional integrals; ordered structures of polynomial idempotent algebras; functions on the unit circle; Hermite functions; Fourier series; modern umbral calculus; quasi-monomiality and operational techniques; rational approximations; Laplace transform and its inverse; applications to analytic number theory; applications to integral and discrete transforms; applications to geometric function theory of complex analysis



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A useful review article [1] is dedicated to the degree asymptotic of entropy-like measures for hypergeometric orthogonal polynomials.

Several well-reputed international journals are dedicated to spread the knowledge of special functions and polynomials, and leading scientific publishers such as Elsevier, John Wiley & Sons, Hindawi, Springer, De Gruyter and MDPI continue to publish articles of eminent scholars working in this field. Many Special Issues of their journals were dedicated to recent advances or different aspects of the theory and its applications. The advent of electronic computers had initially led to the belief that the study of special functions would be abandoned but, as Francesco G. Tricomi had wittily observed in the past, after a short time it was understood that the funeral of special functions should have been postponed. In fact, the solutions obtained by numerical computation are expressed by means of tables and do not allow the analytical knowledge of the phenomenon studied. The rebirth of the theory of special functions and polynomials is testified by numerous scientific conferences dedicated to them. A special site, called SIAM Activity Group on Orthogonal Polynomials and Special Functions, is dedicated to scholars active in this field. The liveliness of the studies presented in this Special Issue range from the extensions of the hypergeometric functions [2,3] to the study of probabilistic problems [1], from approximation theory [4] to operational techniques [5,6], from special number sequences [6,7] to Fourier series [8], from special polynomial sequences [1,2,5,7] to convex functions [9,10], from ordered structures [7,11] to umbral calculus [6], and from matrix functions [12] to integral transforms [12–14].

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**Conflicts of Interest:** The author declares no conflict of interest.

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