



Complex Variable in Approximation Theory

Guest Editors:

Prof. Dr. Paolo Emilio Ricci

Section of Mathematics
Uninettuno University, Roma,
Italy

Prof. Dr. Clemente Cesarano

Section of Mathematics,
International Telematic
University Uninettuno, 00186
Roma, Italy

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Message from the Guest Editors

Dear colleagues,

The close connection between the real and the complex variable is well known, not only for the closure of the complex field with respect to the roots of algebraic equations with real coefficients, which is proven in the so-called fundamental theorem of algebra, but also in many problems of mathematical analysis.

In fact, phenomena such as the length of the convergence radius of the McLaurin series expansion of the arctangent function or even the Runge phenomenon in the Lagrange interpolation over a set of equispaced points would be incomprehensible without the knowledge of the behavior of the considered functions in the complex plane.

The latter are only a few examples of the influence of the complex variable in the approximation problems of real functions. Recently, the calculation of the roots of a non singular matrix with real or complex entries has been obtained using the Dunford–Taylor integral, a classic tool of functional analysis that extends Cauchy's integral formula for complex functions to the case of operators.





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Editor-in-Chief

Prof. Dr. Sergei D. Odintsov

1. Institució Catalana de Recerca
i Estudis Avançats (ICREA),
Passeig Luis Companys, 23,
08010 Barcelona, Spain
2. Institute of Space Sciences
(ICE-CSIC), C. Can Magrans s/n,
08193 Barcelona, Spain

Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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Symmetry Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

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