

Editorial

New Trends in Geometric Function Theory

**Teodor Bulboacă,¹ Mohamed K. Aouf,² Nak Eun Cho,³
Stanisława R. Kanas,⁴ and Milutin Obradovic⁵**

¹ Faculty of Mathematics and Computer Science, Babeş-Bolyai University, 400084 Cluj-Napoca, Romania

² Department of Mathematics, Faculty of Science, University of Mansoura, Mansoura 35516, Egypt

³ Department of Applied Mathematics, Pukyong National University, Busan 608-737, Republic of Korea

⁴ Department of Mathematics, Rzeszów University of Technology, 35-959 Rzeszów, Poland

⁵ Department of Mathematics, Faculty of Civil Engineering, Belgrade University, 1100 Belgrade, Serbia

Correspondence should be addressed to Teodor Bulboacă, bulboaca@math.ubbcluj.ro

Received 1 June 2010; Accepted 1 June 2010

Copyright © 2010 Teodor Bulboacă et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Geometric Function Theory is the branch of complex analysis which deals with the geometric properties of analytic functions. It was founded around the turn of the 20th century and has remained one of the active fields of the current research. Moreover, in spite of the famous coefficient problem, “Bieberbach conjecture” that was solved by Louis de Branges in 1984, it suggests various approaches and directions for the study of geometric function theory. It is very important for us to find new observational and theoretical results in this field with various applications. The cornerstone of Geometric Function Theory is the theory of univalent functions, but new related topics appeared and developed with many interesting results and applications.

The Special Issue has endeavored to publish research papers of the highest quality with appeal to the specialists in a field of geometric aspects of complex analysis and to broad mathematical community. We do hope that the distinctive aspects of the Issue will bring the reader close to the subject of current research, and leave the way open for a more direct and less ambivalent approach to the topic.

We invited the authors to present their original articles as well as review articles that will stimulate the continuing efforts in developing new results in geometric function theory. We would hope that this Special Issue will become an international forum for researches to summarize the most recent developments and ideas in this field. The main aim of the Special Issue of our journal was to invite the authors to present their original articles which provide not only new results or methods but may have a great impact on other people in their efforts to broaden their knowledge and investigation.

The first article is a very interesting survey paper that deals with the normed domain of holomorphy, and the author treated the classical concept of domain of holomorphy in C^n

when the holomorphic functions considered are restricted to lie in some Banach space, and a new view of the case $n = 1$ is considered. The author hopes that the information of this paper will be useful for the future researches in this field.

The next paper deals with the interesting problem of the uniqueness of a meromorphic function sharing one small function with its k th order derivative, and all the results represent an important step for this problem.

Since the fractional integrals and derivatives had been often used in Geometric Function Theory, the paper about the eigenfunctions and fundamental solutions of the fractional two-parameter Laplacian was included in the volume, and the author presents a general operational approach to describe the eigenfunctions and fundamental solutions of the fractional two-parameter Laplacian.

The fourth and the fifth paper deal with some special subclasses of analytic univalent functions defined by a new generalized derivative, and, respectively, with certain subclasses of starlike functions of complex order defined by generalized hypergeometric functions.

In the sixth paper of this issue, it is shown that the equivalence of the Apolonian metric and the inner metric remains unchanged by the removal of a point from the domain, under some assumptions, which improves an earlier result of the same authors.

In the article about the bi-Lipschitz mappings and quasilinearly subharmonic functions, the authors considered certain invariance properties of quasi-nearly subharmonic functions, and they gave partial generalizations of an earlier result.

In the eighth article the author investigated several results concerning the differential subordination of a fractional derivative operator for p -valent functions, where the obtained dominants are the best possible.

The editors would like to thank the authors for their interesting contributions, the Staff of the journal for the unique opportunity offered, and the Editorial Office of the journal for the support that has been provided during the preparation.

Teodor Bulboacă
Mohamed K. Aouf
Nak Eun Cho
Stanisława R. Kanas
Milutin Obradovic