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EDITORIAL

FCAA NEWS: MEETINGS, BOOKS, ANNIVERSARIES

Virginia Kiryakova

Dear readers,

in the Editorial Notes we will announce some important news for our journal, related anniversaries, information on new books and international meetings in FCAA (Fractional Calculus and Applied Analysis) areas, etc.

1. Forthcoming Meetings on FCAA Topics

FDA'12, Nanjing - China, 14-17 May 2012
The 5th IFAC SYMPOSIUM ON
FRACTIONAL DIFFERENTIATION AND ITS APPLICATIONS
Host: Hohai University, Nanjing, China

All details are on the website http://em.hhu.edu.cn/fda12.
For specific questions or contacts, e-mail is: fda12@hhu.edu.cn

Topics: Anomalous diffusion; Automatic Control; Biology; Continuous Time Random Walk; Electrical Engineering; Electronics; Electrochemistry; Electromagnetism; Finance and Economics; Earth Science; Fractional Filters; Biomedical Engineering; Fractional Phase-Locked Loops; Fluid Mechanics; Fractional Variational Principles; Fractional Transforms; Fractional Wavelet; Composite Drug Signals; History of Fractional Calculus; Image Processing; Mathematical methods; Mechanics; Physics; Robotics; Signal Processing; Singularities Analysis and Integral Representations for Fractional Differential Systems; Special Functions Related to Fractional Calculus; Thermal Engineering; Viscoelasticity; etc.

2. Recent Springer Books by FCAA Authors and on Topics Related to FCAA

Gerd Baumann, *Mathematica for Theoretical Physics: Electrodynamics, Quantum Mechanics, General Relativity, and Fractals.*

2005, Springer-Verlag, Vol. 2 of Ser. Mathematica for Theoretical Physics, 2nd Edition, 942 p.; ISBN 6611334122, 9786611334123; ISBN-10: 0-387-21933-1, e-ISBN 0-387-25113-8, ISBN-13: 978-0387-21933-2

pp. 491–504 , DOI: 10.2478/s13540-011-0030-8

Find this book's information on SpringerLink,
http://www.springerlink.com/content/978-0-387-21933-2/
#section=531623&page=1

This is a translated, expanded, and updated version of the original German version of the work "Mathematica ® in der Theoretischen Physik", published by Springer-Verlag Heidelberg, 1993.

The accompanying CD-ROM contains "Mathematica notebooks as well as Mathematica programs. The notebooks contain the entire text of the corresponding volume and can interface with Mathematica. The examples given in the text can also be interactively used and changed for the reader's purposes", – p. [4] of cover.

Concepción A. Monje, YangQuan Chen, Blas M. Vinagre, Dingyü Xue and Vicente Feliu, *Fractional-order Systems and Controls (Fundamentals and Applications)*.

2010, Springer-Verlag (London - Dordrecht - Heidelberg - New York); Engineering >> Ser. Advances in Industrial Control; ISSN 1430-9491, ISBN 978-1-84996-334-3, e-ISBN 978-1-84996-335-0, DOI 10.1007/978-1-84996-335-0; 410 pp.

Find this book's information on SpringerLink,
http://www.springerlink.com/content/978-1-84996-334-3/
#section=789486&page=1&locus=0

The aim of this work is to provide an introduction to the basic definitions and tools for the application of fractional calculus in automatic control. It is intended to serve the control community as a guide to understanding and using fractional calculus in order to enlarge the application domains of its disciplines, and to improve and generalize well established control methods and strategies. A major goal of this book is to present a concise and insightful view of the current knowledge on fractional-order control by emphasizing fundamental concepts, giving the basic tools to understand why fractional calculus is useful in control, to understand its terminology, and to illuminate the key points of its applicability.

This first monograph on fractional-order controls is based on authors' series of papers and articles written in the past 10 plus years.

Fractional-order control is the use of fractional calculus in the aforementioned topics, the system being modeled in a classical way or as a fractional one. From a certain point of view, the applications of fractional calculus have experienced an evolution analogous to that of control, following two parallel paths depending on the starting point: the time domain or the frequency domain. Whilst the applications in dynamic systems modeling have

used, except in some cases of electrochemistry, the time domain, the applications in control have been developed, mainly and from the very beginning, in the frequency domain. It is our hope that this book will be read by, and of interest to, a wide audience. For this reason, it is organized following the structure of a traditional textbook in control. Therefore, in Part I, after the introduction in Chapter 1, Chapter 2 gives the fundamental definitions of fractional calculus, having in mind our goal of providing a stimulating introduction for the control community. Therefore, the mathematical prerequisites have been kept to a minimum (those used in a basic course of control: linear algebra, including matrices, vectors, and eigenvalues; classical calculus, including differential equations and concepts of homogeneous and particular solutions; complex numbers, functions, and variables; and integral transforms of Laplace and Fourier), avoiding unnecessary intricate mathematical considerations but without an essential loss of rigor. Chapter 3 is devoted to state-space representations and analysis of fractional-order systems, completing the fundamental definitions given in Chapter 2. Chapter 4 is a detailed exposition of the core concepts and tools for the useful application of fractional calculus to control, based on the generalization of the basic control actions. In Part II, there is a complete study of fractional-order PID controllers, dealing with definitions, tuning methods, and real application examples given in Chapters 57. Part III focuses on the generalization of the standard leadlag compensator. Chapter 8 presents an effective tuning method for the fractional-order lead-lag compensator (FOLLC), and Chapter 9 proposes a simple and direct auto-tuning technique for this type of structure. Part IV provides an overview of other fractional-order control strategies, showing their achievements and analyzing the challenges for further work. Chapter 10 reviews some important fractional-order robust control techniques, such as CRONE and QFT. Chapter 11 presents some nonlinear fractional-order control strategies. Part V provides methods and tools for the implementation of fractional-order controllers. Chapter 12 deals with continuous- and discrete-time implementations of these types of controllers and Chapter 13 with numerical issues and MATLAB implementations. Finally, Part VI is devoted to real applications of fractional-order systems and controls. The identification problem of an electrochemical process and a flexible structure is presented in Chapter 14; the position control of a single-link flexible robot in Chapter 15; the automatic control of a hydraulic canal in Chapter 16; mechatronic applications in Chapter 17; and fractional-order control strategies for power electronic buck converters in Chapter 18. In the Appendix, additional useful information is given, such as Laplace transform tables involving fractional-order operators.

Albert C. J. Luo, Jian-Qiao Sun, Eds., *Complex Systems: Fractionality, Time-delay and Synchronization.*

2011, Springer-Verlag and Higher Education Press (China); Ser. Nonlinear Physical Science; 1st Edition; 275 p., ISBN-10: 3642175929, ISBN-13: 9783642175923

Find information on this book at

http://www.cocomartini.com/bookstore/index.php/science-and-technologies-textbooks-online-bookstore/complex-systems-fractionality-time-delay-and-synchronization.html

and on http://www.hep.com.cn

This book covers the most recent developments and advances in the theory and application of complex systems in the areas of fractionality, time-delay and synchronization. Each chapter is written by scientists highly active in the field of complex systems. It discusses a new treatise on fractional dynamics and control, as well as the new methods for differential delay systems and control. Lastly, a theoretical framework for the complexity and synchronization of complex system is presented.

The book is intended for researchers in the field of nonlinear dynamics in mathematics, physics and engineering. It can also serve as a reference book for the graduate students in physics, applied mathematics and engineering.

Tadeusz Kaczorek, *Selected Problems of Fractional Systems Theory.*

2011, Springer-Verlag; Series: Lecture Notes in Control and Information Sciences, Volume 411, ISBN 978-3-642-20501-9, e-ISBN 978-3-642-20502-6, DOI: 10.1007/978-3-642-20502-6

More information on this book can be fount at

http://www.springerlink.com/content/978-3-642-20501-9/#section=934771&page=1

This monograph covers some selected problems of positive fractional 1D and 2D linear systems. It is an extended and modified English version of its preceding Polish edition published by Technical University of Bialystok in 2009. This book is based on the lectures delivered by the author to the Ph.D. students of the Faculty of Electrical Engineering of Bialystok University of Technology and of Warsaw University of Technology and on invited lectures in several foreign universities in the last three years. The monograph consists of 12 chapters. 4 appendices and a list of references. It is hoped that this monograph will be value to Ph.D. students and researches from the field of fractional systems.

Manuel Duarte Ortigueira, *Fractional Calculus for Scientists and Engineers.*

2011, Springer-Verlag; Series: Lecture Notes in Electrical Engineering, Vol. 84, 1st Edition., XIV, 152 p. 26 illus.; hardcover, ISBN 978-94-007-0746-7.

Find this book's information on SpringerLink,
http://www.springer.com/engineering/computational+intelligence+and+complexity/book/978-94-007-0746-7

In recent years fractional calculus has been rediscovered by scientists and engineers and applied in an increasing number of fields, such as electromagnetism, control engineering, and signal processing. The increase in the number of physical and engineering processes that are best described by fractional differential equations has motivated its study. This book gives a practical overview of Fractional Calculus as it relates to Signal Processing. It is designed to be accessible by Scientists and Engineers mainly interested in applications, who do not want to spend too much time and effort to access to the main Fractional Calculus features and tools. Readers can benefit from the attempt to present a Fractional Calculus foundation based of the Grünwald-Letnikov derivative, because it exhibits great coherence allowing deduction from it the other derivatives, which appear as a consequence of the Grünwald-Letnikov derivative properties and not as a prescription.

Content Level >> Research

Keywords >> Fractional Calculus - Fractional Derivative - Fractional Signal Processing - Linear Systems - Quantum Computing

Related subjects >> Computational Intelligence and Complexity - Signals & Communication - Theoretical Computer Science; Table of contents >> at SpringerLink.

Sheng, Hu, Chen, YangQuan, Qiu, TianShuang, *Fractional Processes and Fractional-order Signal Processing (Techniques and Applications).*

2012 (Due: November 30, 2011), Springer-Verlag; Series: Signals and Communication Technology, 1st Edition, XXVIII, 318 p. 162 illus., 146 in color; hardcover, ISBN 978-1-4471-2232-6.

Find this book's information on SpringerLink,
http://www.springer.com/engineering/signals/book/978-1-4471-2232-6

Fractional processes are widely found in science, technology and engineering systems. In Fractional Processes and Fractional-order Signal Processing, some complex random signals, characterized by the presence of a heavy-tailed distribution or non-negligible dependence between distant observations (local and long memory), are introduced and examined from

the 'fractional' perspective using simulation, fractional-order modeling and filtering and realization of fractional-order systems. These fractional-order signal processing (FOSP) techniques are based on fractional calculus, the fractional Fourier transform and fractional lower-order moments. Fractional Processes and Fractional-order Signal Processing: o presents fractional processes of fixed, variable and distributed order studied as the output of fractional-order differential systems; o introduces FOSP techniques and the fractional signals and fractional systems point of view; o details real-world-application examples of FOSP techniques to demonstrate their utility; and o provides important background material on Mittag-Leffler functions, the use of numerical inverse Laplace transform algorithms and supporting MATLAB ® codes together with a helpful survey of relevant webpages. Readers will be able to use the techniques presented to re-examine their signals and signal-processing methods. This text offers an extended toolbox for complex signals from diverse fields in science and engineering. It will give academic researchers and practitioners a novel insight into the complex random signals characterized by fractional properties, and some powerful tools to analyze those signals.

Content Level >> Research

Keywords >> Fractional Fourier Transform - Fractional-order Random Processes - Fractional-order Signal Processing - Long-range Dependence - Nonstationary Stochastic Processes - Stable Processes

Related subjects >> Applications - Image Processing - Signals & Communication; Table of Contents >> at SpringerLink.

3. 80th Anniversary of Professor Peter Rusev, Editor of FCAA

Prof. Dr.Sc. Peter Rusev is born 28 August 1931 in the town of Shumen, and this year he is celebrating a 80th Jubilee. He is a member of the Editorial Board of our journal *"Fractional Calculus & Applied Analysis"*.

His main research interests are in the topics: classical orthogonal polynomials, holomorphic functions and series expansions, special functions and integral transforms.

Graduated (1953) at Dept. Math. and Physics - Sofia University, he has obtained Ph.D. degree from Sofia University in 1957, for the thesis "*On the distribution of zeros of a class of entire functions represented in integral form*", under the guidance of Prof. Lyubomir Iliev.

His professional career in Institute of Mathematics and Informatics started in 1958 as a junior researcher, and habilitation (Asso. Prof) in 1968. The next degree - Dr. Sc., he received in 1979 at Bulg. Acad. Sciences for the thesis "*Representation of analytic functions by means of*

systems of polynomials and functions of Laguerre and Hermite of second kind". Full Prof. from 1983, at same institute. Fellow of Alexander v. Humboldt Foundation - at Göttingen University (Sept. 1967-June 1968, Sept. 1968-June 1969). Emeritus Prof. from 2002.

Author of more than 95 scientific articles, 2 scientific monographs and many other publications. Some of his recent articles has been published in this journal FCAA, see at http://www.math.bas.bg/∼fcaa and on the List of Publications.

Scientific advisor of 7 Ph.D. students and their theses, as follows:

– Ivan Ramadanoff (Prof., Dr., Univ. de Caen, France, Dirigeur de Recherches); "Some problems of the theory of the Bergman function" (1974);

– Ivanka Kasandrova (Asso.Prof., Dr., Plovdiv Univ.): "Distribution and asymptotic properties of the zeros of a class of entire functions" (1977);

– Johann Davidov (Prof. D.Sc., IMI-BAS): "Holomorphic mappings and representative domains" (1977);

– Valentin Hristov (Asso.Prof., Dr., IMI-BAS):" On the pseudometrics of Caratheodory and Kobayashi" (1978);

– Georgi Boychev (Asso.Prof., Dr., Tracian Univ. at St. Zagora): "Uniform convergence and summability of Jacobi, Laguerre and Hermite series" (1984);

– Lyubomir Boyadjiev (Prof., Dr.Sc., Tech. Univ. Sofia & Kuwait Univ.): "Analytic functions and Laguerre series" (1986);

– Jordanka Paneva-Konovska (Asso.Prof., Dr., Tech. Univ. Sofia): "Basisity and completeness of numerable systems of Bessel functions and polynomials" (1998).

Prof. Rusev has been advisor of 4 research projects (1989-2000), organizer of a series of international mathematical conferences and co-editor of proceedings of such conferences, namely: 2nd Congress of Bulgarian Mathematicians (Varna 1967, Secretary), Internat. Conf. on Constructive Theory of Functions (Varna 1970, Vice-President), 3rd Congress of Bulgarian Mathematicians (Varna 1972, Vice-President), Internat. Conference on Complex Analysis (Varna 1981, Progr. Comm.), Intern. Colloq. on Complex Analysis and Applications (Golden Sands 1983, Progr. Committee), Internat. Workshops on Transform Methods & Special Functions (Bankya 1994, Varna 1996, Blagoevgrad 1999, Chairman), Internat. Workshop "Transform Methods & Special Functions' 2003" (Progr. Committee), Jubilee Session for the 50th anniversary of IMI (1997, Org. Committee); Intern. Symposium "Geometric Function Theory and applications' 2010" (member of Org. and Progr. Committees), etc.

Prof. Rusev has taken essential role as editor and translator of several volumes, recently published by Bulgarian Academy of Sciences, with selected papers of other famous Bulgarian mathematicians as Nikola Obrechkoff, Lyubomir Tchakaloff, Lyubomir Iliev, etc. He has been also Ed.-in-Chief and author for the parts on special functions, complex analysis, theory of functions, in Physics-Mathematical and Technical Encyclopedia of Bulgarian Academy of Sciences, 1990 and 2000.

In the Institute of Mathematics and Informatics (IMI) - Bulgarian Academy of Sciences, he has been a Scientific Secretary (1964-1969), Vice-Director (1971-1972), member of the Scientific Council of IMI (1995-2007). Chairman of the Specialized Sci. Council on Mathematics and Mechanics at the Higher Attestation Commission, Bulgaria (1998-2004). Expert for the National Science Fund and International foundation "St.St. Cyril and Methodius" on competitions for DAAD scholarships, research projects, etc.

Member of Amer. Math. Soc., Soc. for Didactic of Math. (Germany), Union of Bulgarian Scientists. Reviewer for Math. Reviews and mathematical journals as "Serdica (Bulg. Math. Journal)", "Math. Balkanica", "Revista Technica" (Univ. del Zulia, Venezuela), "Kuwait J. Sci & Eng.", "Soochow J. of Math." (Taipei, Taiwan), "J. Math. Anal. and Appl.", "Bull. Belgian Math. Soc.", "Ann. Polonici Mat.", etc.

Visiting Professor at Trier University and Göttingen University (Germany), International Mathematical Banach Center - Warsaw (Poland), invited talks at many international conferences (Germany, France, Poland, Roumania, Russia, Turkey, Hungary, Serbia), etc.

Teaching activities (at Sofia University, Rousse University, Plovdiv University, Shumen University, IMI - BAS): lectures for undergraduate students (Complex Analysis, Linear Algebra and Analytic Geometry, Differential Equations), lectures for graduate students (Entire Functions, Conformal Mappings, Classical Orthogonal Polynomials, Functions of Several Variables, Zeros of Polynomials), seminars, etc.

For his research, scientific and teaching activities, Prof. Rusev has been awarded by: – Medal "Cyril and Methodius" (1974, 1984); Jubilee medal "1300 Years of Bulgaria" (1981); Jubilee medal "Marin Drinov" - on occasion of 100 years of Academy (1969); Memorial medals "10 years of Shumen University" (1981) and "25 years of Shumen University" (1996); Medal for contributions to IMI on occasion of its 60 years (2007). In 2002, he was promoted as "Doctor Honoris Causa" of the Shumen University.

More details on the CV and lists of publications of Prof. Peter Rusev can be seen at: – http://versita.com/rusev/; – "70th Anniversary of Professor Peter Rusev". *Fract. Calc. Appl. Anal.* **4**, No 3 (2001), pp. 409–416.

Let us pass to Prof. Rusev and his family our best regards and wishes on occasion of his 80th anniversary,

On behalf of the Editorial Board

Main directions of P. Rusev's scientific contributions

Prof. Peter Rusev has essential contributions in the following areas, related to the FCAA topics: – special functions and integral representations; – classical orthogonal polynomials; – distributions of zeros of entire functions, defined by means of Fourier transforms; – Bergman function.

List of Publications

Monographs:

Analytic Functions and Classical Orthogonal Polynomials. Bulgarian Mathematical Monographs **3**, Publ. House of Bulg. Acad. of Sci., Sofia, 1984, 135 pp.

Classical Orthogonal Polynomials and Their Associated Functions in Complex Domain. Bulgarian Mathematical Monographs **10**, Prof. Marin Drinov Acad. Publ. House, 2005, 278 pp.

Research Papers and Surveys:

1. On the distribution of the zeros of a class of entire functions represented in integral form, Ph.D. Thesis, Sofia, 1957, 71 pp. (Bulgarian).

2. On the asymptotic behaviour of the zeros of a class of entire functions, Proc. Inst. Math. Bulg. Acad. Sci., 4, no. 2, 1960, 67 - 73 (Bulgarian).

3. Distribution of the zeros of a class of entire functions, Phys. - Math. Journal, 4(37), 1961, 130 - 135 (Bulgarian).

4. Über die Verteilung der Nullstellen einer Klasse ganzer Funktionen, C. R. l'Acad. bulg. Sci., 14, no. 1, 1961, 7 - 9.

5. On the zeros of a class of entire functions, Phys. - Math. Journal, 5(38), 1962, 295 - 298 (Bulgarian).

6. Expansion of analytic functions in Jacobi polynomials, Proc. Inst. Math. Bulg. Acad. Sci., 7, 1963, 61 - 73 (Bulgarian).

7. Similar transformations of the metric spaces and the notion of ε-entropy of a metric space, Phys. - Math. Journal, 6(39), 1963, 37 - 39 (Bulgarian).

8. On Jacobi polynomials, C. R. l'Acad. bulg. Sci., 16, no. 2, 1963, 117 - 119.

9. Analytic transformations which increase the volume and the Bergman functions, Proc. Inst. Math. Bulg. Acad. Sci., 8, 1964, 195 - 201 (Bulg.).

10. Analytic transformations and the Bergman function, Dokl. Acad. Nauk USSR, 157, no. 2, 1964, 279 - 280 (Russian).

11. Asymptotic properties of the zeros of a class of meromorphic functions, Ann. l'Univ. Sofia, Fac. Math. Inform., Livre 1 - Mathem., 58, 1965, 241 - 271 (Bulgarian).

12. Convergence of series in Jacobi and Bessel poynomials on the boundaries of their regions of convergence, Proc. Inst. Math. Bulg. Acad. Sci., 9, 1966, 73 - 83 (Bulgarian).

13. A class of entire functions with only real zeros, C. R. l'Acad. bulg. Sci., 19, no. 7, 1966, 569 - 570.

14. On a theorem of G. Pólya, C. R. l'Acad. bulg. Sci., 19, no. 8, 1966, 689 - 691.

15. A method for computation of the roots of entire functions of Laguerre's type (with K. Docev and P. Barnev), Proc. Inst. Math. Bulg. Acad. Sci., 10, 1969, 155 - 160 (Bulgarian).

16. A class of analytically uncontinuable series in orthogonal polynomials, Mathem. Annalen, 184, 1969, 61 - 64.

17. On an application of S. N. Bernstein's polynomials, C. R. l'Acad. bulg. Sci., 26, no. 5, 1973, 585 - 586 (Russian).

18. Some results about the distribution of the zeros of the entire functions of the kind $\int_0^1 f(t)\cos zt\,dt$ and $\int_0 qf(t)\sin zt\,dt$, Proc. Inst. Math. Bulg. Acad. Sci., 15, 1974, 33 - 62 (Bulgarian).

19. Some boundary properties of series in Laguerre polynomials, Serdica, 1, 1975, 64 - 76.

20. Convergence of series in Laguerre polynomils, Ann. l'Univ. Sofia, Fac. math. mech., 67, 1976, 249 - 268 (Bulgarian).

21. Laguerre's functions of the second kind, Ann. l'Univ. Sofia, Fac. math. mech., 67, 1976, 269 - 283 (Bulgarian).

22. Overconvergence of series in Laguerre's polynomials, Ann. l'Univ. Sofia, Fac. math. mech., 67, 1976, 285 - 294 (Bulgarian).

23. Biehler - Hermite's theorem for a class of entire functions, Ann. l'Univ. Sofia, Fac. math. mech., 67, 1976, 295 - 303 (Bulgarian).

24. Recurrence equations, orthogonal polynomials and functions of second kind, Ann. HPI Shummen, 1, 1976, 291 - 308 (Bulgarian).

25. Abel's theorem for Laguerre's series, C. R. l'Acad. bulg. Sci., 29, no. 5, 1976, 615 - 617 (Russian).

26. On the representation of a class of analytic functions by series in Laguerre's polynomials, C. R. l'Acad. bulg. sci., 29, no. 6, 1976, 787 - 789 (Russian).

27. Convergence and (C,1)-summability of Laguerre's series at points of the boundaries of their convergence regions, C. R. l'Acad. bulg. Sci., 29, no. 7, 1976, 947 - 950 (Russian).

28. Hermite functions of second kind, Serdica, 2, 1976, 177 - 190.

29. Representation of analytic functions by series in Hermite polynomials, Serdica, 2, 1976, 205 - 209.

30. Expansion of complex functions analytic in a stripe in series of Hermite functions of second kind, Serdica, 2, 1976, 277 - 282.

31. Expansion of analytic functions in Laguerre's series, Ann. l'Univ. Sofia, Fac. math. mech., 68, 1977, 179 - 216 (Bulgarian).

32. On the completeness of the systems of Laguerre's functions of second kind, C. R. l'Acad. bulg. Sci., 30, no. 1, 1977, 9 - 11 (Russian).

33. On the representation of analytic functions by means of Laguerre polynomials, C. R. l'Acad. bulg. Sci., 30, no. 2, 1977, 175 - 178.

34. A theorem of Tauber's type for the summation by means of Laguerre's polynomials, C. R. l'Acad. bulg. Sci., 30, no. 3, 1977, 331 - 334 (Russian).

35. On an inequality for Laguerre's functions of the second kind, C. R. l'Acad. bulg. Sci., 30, no. 5, 1977, 661 - 663 (Russian).

36. Uniqueness of the representation of an analytic function by series in Laguerre's functions of second kind, C. R. l'Acad. bulg. Sci., 30, no. 7, 1977, 969 - 971 (Russian).

37. Representation of analytic functions by the systems of Laguerre's and Hermite's polynomials and functions of second kind, Dr. Sci. Thesis, Sofia, 1972, 202 pp. (Bulgarian).

38. On the representation of analytic functions by Laguerre's series, Dokl. Akad. Nauk USSR, 240, no. 5, 1978, 1025 - 1027 (Russian).

39. On the representation of analytic functions by Laguerre series, Soviet Math. Dokl., 19, 1978, no. 3, 713 - 715.

40. Convergence and (C,1)-summability of Laguerre's series on the boundaries of their convergence regions, Ann. l'Univ. Sofia, Fac. math. mech., 69, 1979, 79 - 106 (Bulgarian).

41. Some results about the representation of analytic functions by Laguerre's series, C. R. l'Acad. bulg. Sci., 32, no. 5, 1979, 569 - 571 (Russian).

42. Analytische Fortsetzung der Laplaceschen Transformation einer Klasse analytischer Funktionen, C. R. l'Acad. bulg. Sci., 32, no. 6, 1979, 719 - 720.

43. On the multiplication of series in Laguerre's functions of second kind, C. R. l'Acad. bulg. Sci., 32, no.7, 1979, 867 - 869 (Russian).

44. On the representation of analytic functions by series in Laguerre's polynomials, Dokl. Acad. Nauk USSR, 249, no.1, 1979, 57 - 59 (Russian).

45. On the representation of analytic functions by series in Laguerre polynomials, Soviet Math. Dokl., 20, 1979, no. 6, 1221 - 1223.

46. The representation of analytic function by means of series in Laguerre functions of second kind, Serdica, 5, 1979, 60 -63.

47. Completeness of Laguerre and Hermite functions of second kind, In Proc. "Constructive Functions Theory '77", Sofia, 1980, 469 - 473.

48. Note on asymptotic properties of confluent hypergeometric functions, C. R. l'Acad. bulg. Sci., 33, No 1, 1980, 27 - 30.

49. On the representation of analytic functions by means of confluent hypergeometric functions, C. R. l'Acad. bulg. Sci., 33, 1980, 155 - 158.

50. On the asymptotic behaviour of the Laguerre functions of second kind, Ann. l'Univ. Sofia, Fac. Math. Mech., 70, 1981, 123 - 132 (Bulg.).

51. A necessary and sufficient condition for representability of an analytic function by series in Laguerre functions of second kind, Ann. l'Univ. Sofia, Fac. math. mech., 70, 1981, 133 - 140 (Bulgarian).

52. Hankel's transform and series in Laguerre polynomials, Pliska (Studia Mathematica Bulgarica), 4, 1981, 9 - 14.

53. Expansion of analytic functions in series of classical orthogonal polynomials, Banach Center Publ., vol. 11, Warszawa, 1983, 287 - 298.

54. Laguerre series and Cauchy integral representation, Annales Polonici Mathematici XLVI, 1985, 295 - 297 (Franciszek Leja in memoriam).

55. On the Laplace transform of a class of analytic functions, Bull. de la Societé des sciences et de lettres de Lódz XXXV, 1985, 1 - 5 (Dedicated to Prof. Zygmund Charzyńsky on occasion of his 50 years' scientific work).

56. Some results about the representation of analytic functions by means of Laguerre series, Ann. l'Univ. Sofia, 71, II/Fac. Math. Mech. (1976/77), 117 - 125 (Bulgarian).

57. Integral representation of analytic functions by means of degenerate hypergeometric functions, Ann. l'Univ. Sofia, Fac. Math. Mech., 72 (1978), 99 - 125 (Bulgarian).

58. Uniform convergence of Laguerre series on boundary arcs of their regions of convergence, Ann. l'Univ. Sofia, 77(1988), Fac.. Math. Mech., Livre 1 - Mathem., 151 - 161 (with G. Boychev) (Bulgarian).

59. On a complete system in $L^2(0,\infty)$, C. R. l'Acad. bulg. Sci., 43, no. 1, 1990, 13 - 14.

60. Müntz type theorems for systems of Tricomi's confluent hypergeometric functions, C. R. l'Acad. bulg. Sci., 43, no. 3, 1990, 25 - 28.

61. Complete systems of Weber-Hermite's functions, Ann. l'Univ. Sofia, 82 (1988), Fac. Math. Inform., Livre 1 - Mathem., 13 - 24 (Bulg.).

62. Integral representations of holomorphic functions by means of Weber-Hermite's functions, Ann. l'Univ. Sofia, 83 (1989), Fac. Math. Inform., Livre 1 - Mathem., 5 - 16 (Bulgarian).

63. On B-summability of Laguerre series, Ann. l'Univ. Sofia, 80 (1986), Fac. Math. Inform., Livre 1 - Mathem., 149 - 157 (with G. Boychev).

64. Complete systems of degenerate hypergeometric functions, Ann. l'Univ. Sofia, 81 (1987), Fac. math. Inform., Livre 1 - Mathem., 19 - 27 (Bulgarian).

65. Complete systems of Jacobi associated functions in spaces of holomorphic functions. Analysis 14, 1994, 249 - 255.

66. An improvement of T.M. Cherry's asymptotic formula for the Weber-Hermite function, Transforms Methods and Special functions, Proceedings of International Workshop, Sofia' 94, 272 - 281.

67. Complete systems of Kummer and Weber-Hermite functions in spaces of holomorphic functions, Symposia Gaussiana, Conf. A, 1995, 723 - 731.

68. Completeness of systems related to Laguerre and Hermite polynomials and associated functions, Analysis 17 (1997), 323 - 334.

69. Holomorphic extension by means of series in Jacobi, Laguerre and Hermite polynomials, Jubilee Proc. "25 years of Shummen's Univ. "Episkop Kostantin Preslavski", Reports - Mathematics and Informatics, Part I (1997), 5 - 12.

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