

EDITORIAL

FCAA RELATED NEWS, EVENTS AND BOOKS (FCAA–VOLUME 16–3–2013)

Virginia Kiryakova

Dear readers,

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

1. Forthcoming Meetings Related to FCAA Topics

**“Fractional Calculus, Probability and Non-local Operators:
Applications and Recent Developments”
November 6-8, 2013, Bilbao – Basque Country – Spain**

**A workshop on the occasion of
the retirement of Francesco Mainardi**

Websites: <https://sites.google.com/site/fcpnlo/> ,
<http://www.bcamath.org/en/activities/workshops>

Description: A wide variety of processes in engineering and applied science exhibit behavior that cannot be modeled by classical methods, motivating and inspiring research on extended mathematical tools.

Recently, the study of fractional calculus (integrals and derivatives of non-integer order), probability (random walks, Lévy processes, Feller processes) and non-local operators (pseudo-differential operators) has led to new fundamental results. This approach has been successful in describing anomalous behavior, including fractional wave equations, fractional diffusion equations, and related continuous-time random walks involving non-local operators with space correlation and time memory. The large spectrum of applications and the associated mathematical issues are of interest to several disciplines.

The state-of-the-art of the current research and the most promising advancements will be presented, discussed and shared to stimulate interactions. The workshop is organized as a problems-for-solutions as well as a solutions-for-problems meeting gathering specialists from different fields with complementary expertise and views.

Selected Papers: Presentations will be published in a special issue of the peer-reviewed international journal "*Communications in Applied and Industrial Mathematics*", published by SIMAI (Italian Society for Applied and Industrial Mathematics).

Important Dates:

1. Abstract submission deadline: 30 June 2013
2. Notification of acceptance: 31 July 2013
3. Payment of fee: at registration desk
4. Workshop starts: 6 November 2013
5. Workshop ends: 8 November 2013
6. Full length paper submission deadline: 31 January 2014

Participation Fee:

Regular participants: 100 euros; Students: 50 euros

Social Program: Get-together light dinner on 5 November, and visit to Bilbao-Casco Viejo on 9 November.

Organizing Committee:

Gianni Pagnini (BCAM and IKERBASQUE, Bilbao, ES)

Enrico Scalas (East Piedmont University, IT, and BCAM, ES)

Venue: BCAM, Basque Center for Applied Mathematics,
Alameda de Mazarredo,
14 48009 Bilbao, Basque Country - Spain

Workshop Email: fcpnlo@gmail.com

International Conference

"Complex Analysis and Applications' 2013"

October 30 – November 2, 2013, Sofia, Bulgaria

<http://www.math.bas.bg/complan/caa13>

This conference is one of the events by which the Institute of Mathematics and Informatics - Bulgarian Academy of Sciences marks

the *100th Anniversary of Academician Ljubomir Iliev* (1913-2000),

a long-term Director of the Institute. The main Organizer is the Section "Analysis, Geometry and Topology" (former "Complex Analysis"), with a 50 Years long history, whose founder and head Acad. L. Iliev was. The name of the conference is to commemorate the specialized international conferences "Complex Analysis and Applications" (Varna 1981, 1983, 1985, 1987, 1991) organized under Acad. Iliev's guidance.

It is also a continuation of the recent series of specialized international conferences “*Transform Methods and Special Functions*” in Bulgaria (1994, 1996, 1999, 2003, 2011), <http://www.math.bas.bg/~tmsf>.

Planned Sections: – Functions of One Complex Variable; – Several Complex Variables and Complex Geometry; – *Special Functions and Integral Transforms*; – *Fractional and Operational Calculi*; – Real and Functional Analysis; – Geometry and Topology; – Methodology of Science and Education; – *Varia in Analysis, Differential Equations, Applications*.

Details on the deadlines, registration fees, accommodation in nearby hotels, scientific program, etc. will be available and updated at the conference website, <http://www.math.bas.bg/complan/caa13>.

If you are interested to receive the official announcements and details on “CAA’ 2013”, please send an e-mail to: caa13@math.bas.bg, indicating your names, affiliation, actual e-mail address for contacts.

On behalf of the Organizers,

Chair of the International Program Committee: *Virginia Kiryakova*

2. Wolfram Research Inc. – Blog: After 100 Years, Ramanujan Gap Filled

by Oleg Marichev – Special Function Researcher; Michael Trott – Chief Scientist; Ed Pegg Jr – Editor, Wolfram Demonstrations Project

A century ago, Srinivasa Ramanujan and G.H. Hardy started a famous correspondence about mathematics so amazing that Hardy described it as “scarcely possible to believe”. On May 1, 1913, Ramanujan was given a permanent position at the University of Cambridge. Five years and a day later, he became a Fellow of the Royal Society, then the most prestigious scientific group in the world. In 1919 Ramanujan was deathly ill while on a long ride back to India, from February 27 to March 13 on the steamship *Nagoya*. All he had was a pen and pad of paper (no *Mathematica* at that time), and he wanted to write down his equations before he died. He claimed to have solutions for a particular function, but only had time to write down a few before moving on to other areas of mathematics. He wrote the following incomplete equation with 14 others, only 3 of them solved.

Read the entire entry at:

<http://blog.wolfram.com/2013/05/01/after-100-years-ramanujan-gap-filled>

To see other posts, visit the Wolfram Blog: <http://blog.wolfram.com>

Best regards,

The Wolfram Blog Team, e-mail: wolframblog@wolfram.com

3. New Books

J. Beran, Y. Feng, S. Ghosh, R. Kulik,
Long-Memory Processes Long-Memory Processes (*Probabilistic Properties and Statistical Methods*). Springer, 2013, XVII, 884 p. 89 illus., 60 illus. in color, ISBN 978-3-642-35511-0, ISBN: 978-3-642-35512-7. Details:

[http://www.springer.com/statistics/
 statistical+theory+and+methods/book/978-3-642-35511-0](http://www.springer.com/statistics/statistical+theory+and+methods/book/978-3-642-35511-0)

Book Description: Long-memory processes are known to play an important part in many areas of science and technology, including physics, geophysics, hydrology, telecommunications, economics, finance, climatology, and network engineering. In the last 20 years enormous progress has been made in understanding the probabilistic foundations and statistical principles of such processes. This book provides a timely and comprehensive review, including a thorough discussion of mathematical and probabilistic foundations and statistical methods, emphasizing their practical motivation and mathematical justification. Proofs of the main theorems are provided and data examples illustrate practical aspects. This book will be a valuable resource for researchers and graduate students in statistics, mathematics, econometrics and other quantitative areas, as well as for practitioners and applied researchers who need to analyze data in which long memory, power laws, self-similar scaling or fractal properties are relevant.

Contents: 1. Definition of Long Memory, 2. Origins and Generation of Long Memory, 3. Mathematical Concepts, 4. Limit Theorems, 5. Statistical Inference for Stationary Processes, 6. Statistical Inference for Nonlinear Processes, 7. Statistical Inference for Nonstationary Processes, 8. Forecasting, 9. Spatial and Space-Time Processes, 10. Resampling, Appendix A: Function Spaces, Appendix B: Regularly Varying Functions, Appendix C: Vague Convergence, Appendix D: Some Useful Integral

Content Level: Research

Keywords: 62Mxx, 62M09, 62M10, 60G18, 60G22, 60G52, 60G60, 91B84 - asymptotic theory - fractal processes - long-memory processes - statistical applications - time series analysis/spatial processes/space-time processes