EDITORIAL

FCAA RELATED NEWS, EVENTS AND BOOKS

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Dear readers,

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

All these Notes are published online with free open access.

1. Special Issue – ICFDA 2018

This is a special journal’s issue containing selected papers from

**ICFDA 2018: “International Conference on
Fractional Differentiation and its Applications”****(16–18 July 2018, Amman, The Hashemite Kingdom of Jordan)****Website:****<http://conferences.ju.edu.jo/en/icfda2018/Home.aspx>**

The ICFDA is a series of specialized international conferences on fractional-order calculus and its applications, usually taking place in each 2 years since 2004. This was the 9th such conference.

See history of the previous FDA conferences, at
[http://conferences.ju.edu.jo/en/icfda2018/Lists/
 PastConferences/PCList.aspx](http://conferences.ju.edu.jo/en/icfda2018/Lists/PastConferences/PCList.aspx).

The conference was organized by the University of Jordan, under the Patronage of Her Royal Highness Princess Sumaya bint El Hassan President of the El Hassan Science City and Royal Scientific Society.

There were 239 participants attendees from 35 participating countries. For detailed program see: [http://conferences.ju.edu.jo/en/icfda2018/
 Documents/ICFDA18PROGRAM.pdf](http://conferences.ju.edu.jo/en/icfda2018/Documents/ICFDA18PROGRAM.pdf).

Following the traditions at the FDA recent events, the following Awards (<http://conferences.ju.edu.jo/en/icfda2018/Pages/Awards.aspx>) were presented at ICFDA 2018:

1. Mittag-Leffler Award: FDA Achievement Award → Shaher Momani
2. Riemann-Liouville Awards: Best FDA Papers (theory, application)
 → HongGuang Sun , Patrick Lanusse
3. Grünwald-Letnikov Awards: Best Student Papers
 (theory, application) → Iqbal M. Batiha , Jiamin Wei , Ang Li
4. FDA Dissemination Award → Reyad El-Khazali
5. Anatoly A. Kilbas Award → Małgorzata Klimek
6. Rudolf Gorenflo Award for young researches in Fractional Calculus
 → Enstar Abdel-Rehim
7. Innovation in Fractional Calculus Award
 → Guo-Cheng Wu and Dumitru Baleanu

More about the Memorial Session and Round Table discussions, see at the short note in *Fract. Calc. Appl. Anal.*, Vol. **21**, No 5 (2018), pp. 1151–1155; DOI: 10.1515/fca-2018-0062: “Fractional Calculus’s Adventures in Wonderland (Round Table held at ICFDA 2018)”, at [https://www.degruyter.com/view/j/fca.2018.21.issue-5/
 issue-files/fca.2018.21.issue-5.xml](https://www.degruyter.com/view/j/fca.2018.21.issue-5/issue-files/fca.2018.21.issue-5.xml).

The Social Program included a trip to Petra, “The Rose City” – One of the 7 Wonders of the World,
<http://conferences.ju.edu.jo/en/icfda2018/Pages/SocialProgram.aspx>

Visit Conference Photo Galery at: [http://conferences.ju.edu.jo/
 en/icfda2018/DayOnePix/Forms/DayOnePix.aspx](http://conferences.ju.edu.jo/en/icfda2018/DayOnePix/Forms/DayOnePix.aspx).

Guest-Editors of this SI for ICFDA 2018:

Virginia Kiryakova (Institute of Math. and Inform., Bulg. Acad. Sci.)
J.A. Tenreiro Machado (Inst. of Engineering, DEE, Polytechnic of Porto)
Shaher Momani (The University of Jordan, Jordan)

2. Calendar of Coming FC Related Meetings

Workshop “Nonlocal and Fractional Operators” (12-13 April 2019, Sapienza, Italy)

Website:

<https://sites.google.com/view/lfo12-13aprile2019/home>

Dear Colleagues,

we are happy to announce this Workshop to be held at the Department of Statistical Sciences of Sapienza University of Rome, on April 12-13, 2019. Please find the details in the provided website.

The workshop is dedicated to Prof. Renato Spigler (Dept. Mathematics and Physics, Roma Tre University) in the occasion of his retirement and wishes to celebrate his scientific contributions in the field of numerical analysis and fractional calculus.

The purpose of the meeting is to create new bridges, bringing together collaborators and researchers, in theoretical and applied mathematics, who are interested in fractional calculus. Topics include probability, mathematical physics and numerical analysis. The invited speakers are:

– A. Bazzani (Dept. Physics and Astronomy, Bologna University); – F. Camilli (Dept. SBAI, Sapienza University); – M.D’Ovidio (Dept. SBAI, Sapienza University); – A. Di Crescenzo (Dept. Mathematics, Salerno University); – K. Diethelm (University of Applied Sciences Würzburg-Schweinfurt); – F. Ferrari (Dept. Mathematics, Bologna University); – J. Gajda (University of Warsaw); – R. Garra (Dept. Statistics, Sapienza University); – R. Garrappa (Dept. Mathematics, University of Bari); – A. Giusti (Bishop’s University, Montreal); – G. Karniadakis (Division of Applied Mathematics, Brown University); – Y. Luchko (Dept. Mathematics, Technical University of Applied Sciences, Berlin); – E. Nane (Dept. of Mathematics and Statistics, Auburn University); – G. Pagnini (Basque Center for Applied Mathematics); – P. Paradisi (ISTI-CNR, Pisa); – A. Rodriguez-Rozas (Santander Bank); – E. Scalas (School of Mathematical and Physical Sciences, University of Sussex); – V. Sposini (University of Potsdam); – A. Taloni (Institute for Complex Systems, CNR, Roma); – B. Toaldo (Dept. Mathematics, Torino University); – M. Yamamoto (Graduate School of Mathematical Sciences, University of Tokyo).

Registration is free, but we kindly ask the participants to fill the following form, as soon as possible:

<https://sites.google.com/view/lfo12-13aprile2019/registration>.

Best regards from the Scientific Committee:

– Luisa Beghin (Dept. Statistical Sciences, Sapienza University of Rome); – Michele Caputo (Accademia Nazionale dei Lincei); – Mauro Fabrizio (Dept. Mathematics, University of Bologna); – Francesco Mainardi (Dept. Physics and Astronomy, University of Bologna); – Enzo Orsingher (Dept. Statistical Sciences, Sapienza University of Rome); – Tommaso Ruggeri (Dept. Mathematics, University of Bologna)

On behalf of Organizers: Luisa Beghin, and Francesco Mainardi

AMEE 2019: 45th International Conference
“Applications of Mathematics in Engineering and Economics”
(7-13 June 2019, Sozopol, Bulgaria)
Website: <http://amee.tu-sofia.bg/>

Organized by Faculty of Applied Mathematics and Informatics – Technical University of Sofia and Faculty of Mathematics and Informatics – Sofia University “St. Kliment Ohridski”, annually in June in the **ancient town of Sozopol, a popular Black Sea resort place**. The town is located 34 kilometers south of Bourgas (International Burgas Airport, IATA: BOJ) and can be reached also via Sofia (Sofia Airport, IATA: SOF), then by buses from Sofia Central Bus Station (connection via Metro Lines), journey about 5-6 hours.

The weather at this time of year is favorable for enjoying sunny and sea baths. The accommodation of participants can be in the Leisure House of Technical University as well as in other hotels around the Conference venue, along with the Black Sea coast, details:

<http://amee.tu-sofia.bg/accomodation.php>.

The peer-reviewed contributions of AMEE are published in open access by American Institute of Physics Conference Proceedings, Scopus indexed publication with SJR.

The Conference will cover the following topics: – Mathematical Analysis and Applications - measures and integration, potential theory, functional analysis, Fourier analysis, approximations, special functions and integral transforms; – Differential Equations - ODE, PDE, integral equations, dynamical systems; – Differential Geometry - tensor analysis, differential topology, Lie groups, complex manifolds; – Operations Research, Economics, Programming - stability, numerical methods, finance, mathematical modeling; – Numerical Methods and Mathematical Modeling; – Statistics, Probability theory - branching processes, reliability, queueing theory, industrial statistics; – Software Innovations in Scientific Computing - algebraic structures in informatics, discrete structures; – E-learning.

The above topics can be precised and complemented by announcing and organizing special sessions.

Currently Announced Special Sessions:

– “**Fractional Calculus, Special Functions and Applications**”, organized by Prof. Virginia Kiryakova, IMI – BAS and Prof. Jordanka Paneva-Konovska, FAMI – TU Sofia.

– “Partial Differential Equations and Applications”, organized by Prof. Nedyu Popivanov, Faculty of Mathematics and Informatics – University of Sofia.

Contact with Organizers, e-mail: amee@tu-sofia.bg

We specially invite colleagues devoted to Fractional Calculus, Special Functions, Integral Transforms and their Applications to visit this charming place, attend the conference and take part in our Special Session – please contact us via V. Kiryakova, e-mail: virginia@diogenes.bg

The Organizers, V. Kiryakova and J. Paneva-Konovska

3. New Books

Christos H. Skiadas (Ed.), *Fractional Dynamics, Anomalous Transport and Plasma Science* (Lectures from CHAOS2017). Springer International Publ., 2018, 201 pp.+ XI, ISBN: 978-3-030-04482-4 (Hardcover), ISBN: 978-3-030-04483-1 (eBook).

Details: <https://www.springer.com/cn/book/9783030044824>

This book collects interrelated lectures on fractal dynamics, anomalous transport and various historical and modern aspects of plasma sciences and technology.

The origins of plasma science in connection to electricity and electric charges and devices leading to arc plasma are explored in the first contribution by Jean-Marc Ginoux and Thomas Cuff. The second important historic connection with plasmas was magnetism and the magnetron. Victor J. Law and Denis P. Dowling, in the second contribution, review the history of the magnetron based on the development of thermionic diode valves and related devices. In the third chapter, Christos H Skiadas and Charilaos Skiadas present and apply diffusion theory and solution strategies to a number of stochastic processes of interest. Anomalous diffusion by the fractional Fokker-Planck equation and Lévy stable processes are studied by Johan Anderson and Sara Moradi in the fourth contribution. They consider the motion of charged particles in a 3-dimensional magnetic field in the presence of linear friction and of a stochastic electric field. Analysis of low-frequency instabilities in a low-temperature magnetized plasma is presented

by Dan-Gheorghe Dimitriu, Maricel Agop in the fifth chapter. The authors refer to experimental results of the Innsbruck Q-machine and provide an analytical formulation of the related theory. In chapter six, Stefan Irimiciuc, Dan-Gheorghe Dimitriu, Maricel Agop propose a theoretical model to explain the dynamics of charged particles in a plasma discharge with a strong flux of electrons from one plasma structure to another. The theory and applications of fractional derivatives in many-particle disordered large systems are explored by Z.Z. Alisultanov, A.M. Agalarov, A.A. Potapov, G.B. Ragimkhanov. In chapter eight, Maricel Agop, Alina Gavrilut, and Gabriel Crumpei explore the motion of physical systems that take place on continuous but non-differentiable curves (fractal curves). Finally in the last chapter S.L. Cherkas and V.L. Kalashnikov consider the perturbations of a plasma consisting of photons, baryons, and electrons in a linearly expanding (Milne-like) universe taking into account the metric tensor and vacuum perturbations.

The Contents is available at:
<https://www.springer.com/cn/book/9783030044824>.

J.A. Tenreiro Machado (Ed.), *Handbook of Fractional Calculus with Applications*, 8 Volumes' Series: Ser. De Gruyter Reference, De Gruyter, To appear: February - March 2019.

Overview: – A unique, comprehensive overview of fractional calculus and its applications. – With authoritative contributions from the world's leading experts. – Of interest to mathematicians, physicists, and engineers.

Aims and Scope: This multi-volume handbook (8 volumes) is the most up-to-date and comprehensive reference work in the field of fractional calculus and its numerous applications.

Volumes' details:

A. Kochubei, Y. Luchko (Eds.) *Handbook of Fractional Calculus with Applications. Volume 1: Basic Theory*, De Gruyter, 481 pp.+ viii, ISBN: 978-3-11-057081-6 (Hardcover), ISBN 978-3-11-057162-2 (eBook, pdf).

<https://www.degruyter.com/view/product/497027>.

The first volume collects authoritative chapters covering the mathematical theory of fractional calculus, including fractional-order operators, integral transforms and equations, special functions, calculus of variations, and probabilistic and other aspects.

A. Kochubei, Y. Luchko (Eds.) *Handbook of Fractional Calculus with Applications. Volume 2: Fractional Differential Equations*, De Gruyter, 519 pp. + viii, ISBN: 978-3-11-057082-3 (Hardcover), ISBN 978-3-11-057166-0 (eBook, pdf).

<https://www.degruyter.com/view/product/497030>.

This second volume collects authoritative chapters covering the mathematical theory of fractional calculus, including ordinary and partial differential equations of fractional order, inverse problems, and evolution equations.

G.E. Karniadakis (Ed.) *Handbook of Fractional Calculus with Applications. Volume 3: Numerical Methods*, De Gruyter, Appr. 343 pp. + vii, ISBN: 978-3-11-057083-0 (Hardcover), ISBN 978-3-11-057168-4 (eBook, pdf).

<https://www.degruyter.com/view/product/497031>.

This third volume collects authoritative chapters covering several numerical aspects of fractional calculus, including time and space fractional derivatives, finite differences and finite elements, and spectral, meshless, and particle methods.

V.E. Tarasov (Ed.) *Handbook of Fractional Calculus with Applications. Volume 4: Applications in Physics, Part A*, De Gruyter, 306 pp. + viii, ISBN: 978-3-11-057088-5 (Hardcover), ISBN 978-3-11-057170-7 (eBook, pdf).

<https://www.degruyter.com/view/product/497031>.

This fourth volume collects authoritative chapters covering several applications of fractional calculus in physics, including classical and continuum mechanics.

V.E. Tarasov (Ed.) *Handbook of Fractional Calculus with Applications. Volume 5: Applications in Physics, Part B*, De Gruyter, 306 pp. + viii, ISBN: 978-3-11-057089-2 (Hardcover), ISBN 978-3-11-057172-1 (eBook, pdf).

<https://www.degruyter.com/view/product/497033>.

This fifth volume collects authoritative chapters covering several applications of fractional calculus in physics, including electrodynamics, statistical physics and physical kinetics, and quantum theory.

I. Petráš (Ed.) *Handbook of Fractional Calculus with Applications. Volume 6: Applications in Control*, De Gruyter, 427 pp. + vii, ISBN: 978-3-11-057090-8 (Hardcover), ISBN 978-3-11-057174-5 (eBook, pdf).

<https://www.degruyter.com/view/product/497034>.

This sixth volume collects authoritative chapters covering several applications of fractional calculus in control theory, including fractional controllers, design methods and toolboxes, and a large number of engineering applications of control.

D. Baleanu, A. Mendes Lopes (Eds.) *Handbook of Fractional Calculus with Applications. Volume 7: Applications in Engineering, Life and Social Sciences, Part A*, De Gruyter, Approx. 288 pp. + vii, ISBN: 978-3-11-057091-5 (Hardcover), ISBN 978-3-11-057190-5 (eBook, pdf).

<https://www.degruyter.com/view/product/497036>.

This seventh volume collects authoritative chapters covering several applications of fractional calculus in in engineering, life, and social sciences, including applications in biology and medicine, mechanics of complex media, economy, and electrical devices.

D. Baleanu, A. Mendes Lopes (Eds.) *Handbook of Fractional Calculus with Applications. Volume 8: Applications in Engineering, Life and Social Sciences, Part B*, De Gruyter, Approx. 321 pp. + vii, ISBN: 978-3-11-057092-2 (Hardcover), ISBN 978-3-11-057192-9 (eBook, pdf).

<https://www.degruyter.com/view/product/497037>.

This eighth volume collects authoritative chapters covering several applications of fractional calculus in engineering, life and social sciences, including applications in signal and image analysis, and chaos.

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