

Guest Editorial: Fractional Calculus, Probability and Non-local Operators: Applications and Recent Developments, Part 2

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It is a pleasure for us to introduce the second and final part of a special issue of *Communications in Applied and Industrial Mathematics* containing contributions presented at the Workshop *Fractional Calculus, Probability and Non-local Operators: Applications and Recent Developments*. The Workshop was organised on 6–8 November 2013 in Bilbao, Basque Country, Spain, as a tribute to the career of Professor Francesco Mainardi, on the occasion of his retirement.

Further information on the workshop is available from the following website: <https://sites.google.com/site/fcpnlo>, and from the Editorial written for part one [1]. The papers of the first part are published in Vol 6, No 1 (2014) of the journal and are free downloadable at <http://caim.simai.eu/index.php/caim/issue/view/48>.

The workshop took place at the Basque Center for Applied Mathematics (BCAM) in Bilbao (<http://www.bcamath.org>). A second edition was organised on 10–14 November 2014. BCAM was recently awarded the Severo Ochoa Center of Excellence accreditation by the Spanish Government.

Francesco Mainardi spent a large part of his academic career at the Department of Physics, University of Bologna, and his biographical notes together with a historical report on the nowadays-called M-Wright/Mainardi function can be found in the first part of this special issue [1–3].

Part two contains 11 contributions. In particular, we would like to highlight those by Michele Caputo [4] and Rudolf Gorenflo [5], outstanding researchers on fractional calculus with a long-standing scientific collaboration with Francesco Mainardi. Caputo was supervisor of Mainardi in 1971 for his Advanced Degree in Theoretical Mechanics from the University of Bologna, and Gorenflo has been a co-author of many papers published since

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when they met in 1994, during the International Summer School on Fractal and Hyperbolic Geometry held in Bordeaux, France.

The paper by Caputo concerns an analysis of European economies using fractional derivatives, whereas the paper by Gorenflo concerns a stochastic interpretation of the time-fractional diffusion-wave equation. We wish to thank both of them for including their contributions in this special issue.

The other 9 papers deal with travelling wave solutions of fractional differential equations (Achleitner and Kuehn [6], Cuesta [7]), analysis of synthetic financial markets (Gerardo–Giorda et al. [8]), numerical schemes for Caputo derivative (Li et al. [9]), entropy analysis and fractional calculus (Sebastian [10]), fractional models of physical phenomena including relativistic quantum mechanics (Lőrinczi et al. [11]), random front propagation (Mentrelli and Pagnini [12]), anomalous diffusion (Paradisi [13]) and slowing-down of neutrons (Silva Costa et al. [14]).

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Once more, we would like to take this opportunity to thank BCAM staff for their indispensable help before, during and after the workshop. In particular, we acknowledge receptionists Irati Landa and Arrate Rojas for their kind, patient and valuable assistance to us and all the attendees.

Last but not least, we thank SIMAI and the Editorial team of *Communications in Applied and Industrial Mathematics* for accepting to host these workshop contributions and, in particular, we would like to acknowledge Editor in Chief Giorgio Fotia and Editorial Assistant Francesca Sechi for taking care of the practical realization of this issue.

The Guest Editors,
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