**FDA Express**  Vol. 10, No. 2, Jan. 30, 2014

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PDF download:

◆ Latest SCI Journal Papers on FDA

(Searched on 30th January 2014)

◆ Conference

The 22nd European Signal Processing Conference

◆ Books

Lévy Processes and Infinitely Divisible Distributions
Microphysics of Cosmic Plasmas

◆ Journals

Entropy

Computers & Mathematics with Applications

◆ Paper Highlight

Generalization of a theoretical basis for the application of fractional calculus to viscoelasticity

A Matlab toolbox for positive fractional time derivative modeling of arbitrarily frequency-dependent viscosity
◆ Websites of Interest

Fractional Calculus & Applied Analysis

International Conference on Fractional Differentiation and Its Applications

(ICFDA'14)

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Latest SCI Journal Papers on FDA

(Searched on 30th January 2014)

Adaptive synchronization of drive-response fractional-order complex dynamical networks with uncertain parameters
By: Yang, Li-xin; Jiang, Jun
COMMUNICATIONS IN NONLINEAR SCIENCE AND NUMERICAL SIMULATION Volume: 19 Issue: 5 Pages: 1496-1506 Published: MAY 2014

A comment on "Global solutions for nonlinear fuzzy fractional integral and integrodifferential equations"
By: Salahshour, S.; Abbasbandy, S.
COMMUNICATIONS IN NONLINEAR SCIENCE AND NUMERICAL SIMULATION Volume: 19 Issue: 5 Pages: 1256-1258 Published: MAY 2014

ON THE ORBITAL STABILITY OF FRACTIONAL SCHRODINGER EQUATIONS
By: Cho, Yonggeun; Hajaiej, Hichem; Hwang, Gyeongha; et al.
COMMUNICATIONS ON PURE AND APPLIED ANALYSIS Volume: 13 Issue: 3 Pages: 1267-1282 Published: MAY 2014

UNIFORM HOLDER REGULARITY WITH SMALL EXPONENT IN COMPETITION-FRACTIONAL DIFFUSION SYSTEMS
By: Terracini, Susanna; Verzini, Gianmaria; Zilio, Alessandro
Conference

The 22nd European Signal Processing Conference

September 1 -5, 2014, Lisbon, Portugal

http://www.eusipco2014.org/

(Contributed by Prof. Manuel Duarte Ortigueira)

Organization: Instituto de Telecomunicações and INESC-ID, Portugal
European Association for Signal Processing (EURASIP)
Technical co-sponsorship: IEEE Signal Processing Society
IEEE Aerospace & Electronic Systems Society

Important Dates
Proposal for tutorials: February 17, 2014
Electronic submission of full papers: February 17, 2014
Notification of acceptance: May 26, 2014
Submission of camera-ready papers and copyright forms: June 23, 2014

Plenary Talks
Yonina Eldar, Technion - Israel Institute of Technology, Israel
Jan Rabaey, University of California, Berkeley, USA
Roger Dannenberg, Carnegie Mellon University, USA
Call for Papers

EUSIPCO 2014 will be held on September 1-5, 2014, in Lisbon, Portugal. This is one of the largest international conferences in the field of signal processing and will address all the latest developments in research and technology. The conference will bring together individuals from academia, industry, regulation bodies, and government, to exchange and discuss ideas in all the areas and applications of signal processing. EUSIPCO 2014 will feature world-class keynote speakers, special sessions, plenary talks, tutorials, and technical sessions.

We invite the submission of original, unpublished technical papers on signal processing topics, including but not limited to:

- Audio and acoustic signal processing
- Design and implementation of signal processing systems
- Multimedia signal processing
- Speech processing
- Image and video processing
- Machine learning
- Signal estimation and detection
- Sensor array and multichannel signal processing
- Signal processing for communications including wireless and optical communications and networking
- Signal processing for location, positioning and navigation
- Nonlinear signal processing
- Signal processing applications including health and biosciences

Procedure to submit papers, proposals for special sessions, and tutorials are detailed at http://www.eusipco2014.org/. Submitted papers must be camera-ready, up to five pages long, and conform to the format specified on the EUSIPCO'2014 website.

We look forward to seeing you at the conference.
Lévy Processes and Infinitely Divisible Distributions

Ken-iti Sato

Book Description

Lévy processes are rich mathematical objects and constitute perhaps the most basic class of stochastic processes with a continuous time parameter. This book is intended to provide the reader with comprehensive basic knowledge of Lévy processes, and at the same time serve as an introduction to stochastic processes in general. No specialist knowledge is assumed and proofs are given in detail. Systematic study is made of stable and semi-stable processes, and the author gives special emphasis to the correspondence between Lévy processes and infinitely divisible distributions. All serious students of random phenomena will find that this book has much to offer. Now in paperback, this corrected edition contains a brand new supplement discussing relevant developments in the area since the book's initial publication.

More information on this book can be found by the following link: http://books.google.com.hk/books/about/Lévy_Processes_and_Infinitely_Divisible.html?id=CwT5BNG0-owC

Microphysics of Cosmic Plasmas

André Balogh, Andrei Bykov, Peter Cargill, Richard Dendy, Thierry Dudok de Wit, John Raymond

Book Description

This title presents a review of the detailed aspects of the physical processes that underlie the observed properties, structures and dynamics of cosmic plasmas. An assessment of the status of understanding of microscale processes in all astrophysical collisionless plasmas is provided. The topics discussed include turbulence in astrophysical and solar system plasmas as a phenomenological description of their dynamic properties on all scales; observational, theoretical and modelling aspects of collisionless magnetic reconnection; the formation and dynamics of shock waves; and a review and assessment of microprocesses, such as the hierarchy of plasma instabilities, non-local and non-diffusive transport processes and ionisation and radiation processes. In addition, some of the lessons that have been learned from the
extensive existing knowledge of laboratory plasmas as applied to astrophysical problems are also covered. This volume is aimed at graduate students and researchers active in the areas of cosmic plasmas and space science. Originally published in Space Science Reviews journal, Vol. 278/2-4, 2013.

More information on this book can be found by the following link: http://www.springer.com/astronomy/extraterrestrial+physics,+space+sciences/book/978-1-4899-7412-9

[Back]

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Journals

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Entropy

Volume 16, Issue 1(partial)

**Entropy and Equilibria in Competitive Systems**

A. Y. Klimenko

**What is a Multiscale Problem in Molecular Dynamics?**

Luigi Delle Site

**Computing Equilibrium Free Energies Using Non-Equilibrium Molecular Dynamics**

Christoph Dellago and Gerhard Hummer

**Nonadiabatic Molecular Dynamics Based on Trajectories**

by Felipe Franco de Carvalho, Marine E. F. Bouduban, Basile F. E. Curchod and Ivano Tavernelli

**Approximating Time-Dependent Quantum Statistical Properties**
by Sara Bonella and Giovanni Ciccotti

**Analysis of Time Reversible Born-Oppenheimer Molecular Dynamics**

by Lin Lin, Jianfeng Lu and Sihong Shao

**Time Integrators for Molecular Dynamics**

by Nawaf Bou-Rabee

**Enhanced Sampling in Molecular Dynamics Using Metadynamics, Replica-Exchange, and Temperature-Acceleration**

Cameron Abrams and Giovanni Bussi

**Correlation Functions in Open Quantum-Classical Systems**

Chang-Yu Hsieh and Raymond Kapral

**Malliavin Weight Sampling: A Practical Guide**

Patrick B. Warren and Rosalind J. Allen

**Dynamical Non-Equilibrium Molecular Dynamics**

Giovanni Ciccotti and Mauro Ferrario

**Markov State Models for Rare Events in Molecular Dynamics**

Marco Sarich, Ralf Banisch, Carsten Hartmann and Christof Schütte

**First Principles Methods: A Perspective from Quantum Monte Carlo**

Miguel A. Morales, Raymond Clay, Carlo Pierleoni and David M. Ceperley

**Modeling Potential Energy Surfaces: From First-Principle Approaches to Empirical Force Fields**

Pietro Ballone

**Characterization of Rare Events in Molecular Dynamics**

Carsten Hartmann, Ralf Banisch, Marco Sarich, Tomasz Badowski and Christof Schütte
Adaptive Switched Generalized Function Projective Synchronization between Two Hyperchaotic Systems with Unknown Parameters

Xiaobing Zhou, Lianglin Xiong and Xiaomei Cai

A Novel Approach to Extracting Casing Status Features Using Data Mining

Jikai Chen, Haoyu Li, Yanjun Wang, Ronghua Xie and Xingbin Liu

Nanomechanical Properties and Deformation Behaviors of Multi-Component (AlCrTaTiZr)N_xSi_y High-Entropy Coatings

Shao-Yi Lin, Shou-Yi Chang, Chia-Jung Chang and Yi-Chung Huang

Quantifying Compressibility and Slip in Multiparticle Collision (MPC) Flow Through a Local Constriction

Tahmina Akhter and Katrin Rohlf

Entropy Estimation of Generalized Half-Logistic Distribution (GHLD) Based on Type-II Censored Samples

Jung-In Seo and Suk-Bok Kang

Dynamics of Correlation Structure in Stock Market

Maman Abdurachman Djauhari and Siew Lee Gan

Multiple Solutions of Nonlinear Boundary Value Problems of Fractional Order: A New Analytic Iterative Technique

Omar Abu Arqub, Ahmad El-Ajou, Zeyad Al Zhour and Shaher Momani

[Back]
Convergence analysis of a new multiscale finite element method for the stationary Navier–Stokes problem

Juan Wen, Yinnian He

A simple solution of the Bratu problem

A. Mohsen

A novel model for biofilm growth and its resolution by using the hybrid immersed interface-level set method

Patricio Cumsille, Juan A. Asenjo, Carlos Conca

The effect of mixed convection on particle laden flow analysis in a cavity using a Lattice Boltzmann method

Che Sidik Nor Azwadi, Leila Jahanshaloo, Arman Safdari

Unconditionally stable numerical method for a nonlinear partial integro-differential equation

Nisha Sharma, Kapil K. Sharma

A penalty method for a fractional order parabolic variational inequality governing American put option valuation

Wen Chen, Song Wang

Stokes equations with small parameters in half plane

Veli B. Shakhmurov

Efficient numerical solution of discrete multi-component Cahn–Hilliard systems

P. Boyanova, M. Neytcheva

An equation error approach for the elasticity imaging inverse problem for predicting tumor location

E. Crossen, M.S. Gockenbach, B. Jadamba, A.A. Khan, B. Winkler

Nonnegative splittings for rectangular matrices

Debasisha Mishra
Weak solution of the equation for a fractional porous medium with a forcing term

Mingshu Fan, Shan Li, Lei Zhang

Hopf bifurcation in spatially homogeneous and inhomogeneous autocatalysis models

Gaihui Guo, Bingfang Li, Xiaolin Lin

Time-fractional heat equations and negative absolute temperatures

Wei Zhang, Xing Cai, Sverre Holm

Stability analysis for Zakharov–Kuznetsov equation of weakly nonlinear ion-acoustic waves in a plasma

A.R. Seadawy

Coupling discontinuous Galerkin discretizations using mortar finite elements for advection–diffusion–reaction problems

Mi-Young Kim, Mary F. Wheeler

Minimizing synchronizations in sparse iterative solvers for distributed supercomputers

Sheng-Xin Zhu, Tong-Xiang Gu, Xing-Ping Liu

Numerical approximation of time evolution related to Ginzburg–Landau functionals using weighted Sobolev gradients

Nauman Raza, Sultan Sial, Asma Rashid Butt

A Nyström flavored Calderón Calculus of order three for two dimensional waves, time-harmonic and transient

Víctor Domínguez, Sijiang L. Lu, Francisco-Javier Sayas

[Back]
Generalization of a theoretical basis for the application of fractional calculus to viscoelasticity

Andrew W. Wharmby, Ronald L. Bagley

Publication information: Andrew W. Wharmby, Ronald L. Bagley. Generalization of a theoretical basis for the application of fractional calculus to viscoelasticity. J. Rheol. 57, 1429 (2013); http://scitation.aip.org/content/sor/journal/jor2/57/5/10.1122/1.4819083

Abstract

This work investigates the effect a fractional derivative may have on the spectrum of relaxation modes of a viscoelastic material. It is shown that the order of the fractional derivative results in a modification to the constitutive relationships that exist within the Rouse model for viscoelasticity. These relationships that are used in engineering analyses have been previously developed from an empirical standpoint. The resulting modification to these constitutive relationships further supports the inclusion of fractional calculus in models of viscoelastic materials and hence increase their level of confidence associated with their usage.

A Matlab toolbox for positive fractional time derivative modeling of arbitrarily frequency-dependent viscosity

Wei Cai, Wen Chen, Xiaodi Zhang

Abstract

The symmetric fractional derivative is introduced and its properties are studied. The Euler-Lagrange equations for models depending on sequential derivatives of type are derived using minimal action principle. The Hamiltonian for such systems is introduced following methods of classical generalized mechanics and the Hamilton’s equations are obtained. It is explicitly shown that models of fractional sequential mechanics are non-conservative. The limiting procedure recovers classical generalized mechanics of systems depending on higher order derivatives. The method is applied to fractional deformation of harmonic oscillator and to the case of classical frictional force proportional to velocity.