

# fractional Calculus & Applied Analysis

An International Journal for Theory and Applications

VOLUME 12, NUMBER 3 (2009) ISSN 1311-0454

MEETINGS IN 2009:  
Symposium on Fractional Signals and Systems,  
Lisbon, 4 – 6 November 2009, Portugal

Announce by M. Duarte Ortigueira <sup>1</sup>, J.A. Tenreiro Machado <sup>2</sup>

Details at <https://www.fct.unl.pt/fss09>



FACULDADE DE  
CIÊNCIAS E TECNOLOGIA  
UNIVERSIDADE NOVA DE LISBOA

[Contactos](#)
[Moodle](#)
[Webmail](#)
[Log in](#)

[Fractional something](#)  
[Themes](#)  
[call for papers](#)  
[Important dates](#)  
[Accommodation](#)  
[Fee and Registration](#)  
[Location](#)  
[Committees](#)  
[Other conferences](#)  
[Lisbon in images](#)



Symposium on Fractional Signals  
and Systems - Lisbon '09  
4 - 6 November 2009



UNINOVA

The word **fractional** is quite up-to-date in this beginning of the XXI century. In fact we find it in a lot of apparently different scientific fields that in a first glance seem not to have any connection. But is this true? Doesn't exist any relation between **Fractional Calculus** and the **Fractional Fourier Transform**? Or between these and the **fractals**? And what about the fractional filters? And so on ...

The Fractional Calculus is a generalisation of the traditional calculus that leads to similar concepts and tools, but with a much wider applicability. In the last two decades, fractional (or non integer) differentiation has played a very important role in various fields such as mechanics, electricity, chemistry, biology, economics and notably control theory and signal and image processing. In these last three fields, some important considerations such as modelling, curve fitting, filtering, pattern recognition, edge detection, identification, stability, controllability, observability, and robustness are now linked to long-range dependence phenomena.

The Fractional Fourier Transform as a generalisation of the usual Fourier Transform began by having some small applications in Optics and has being extended to other areas. The success of the fractal methodology is unquestionable with a lot of applications, namely in Nonlinear System Theory and Image Processing.

The advantages of fractional filters led to an increment in the research of new design methods and applications.

<sup>1</sup> e-mail: [mduarte@fct.unl.pt](mailto:mduarte@fct.unl.pt)

<sup>2</sup> e-mail: [jtm@isep.ipp.pt](mailto:jtm@isep.ipp.pt)

**Chair:**

Manuel Ortigueira

**Co-Chairs:**

Blas Vinagre, J.A. Tenreiro Machado, Juan Trujillo

**International Program Committee:**

A. Carpinteri, A. Kilbas, D. del-Castillo-Negrete, D. Baleanu, E. Scalas, J. Sabatier, J.J. de Espindola, J.-C. Trigeassou, K. Diethelm, M. Saleh Tavazoei, R. Malti, R. Nigmatullin, R. Magin, R. Vilela Mendes, S. Samko, T. Poinot, Tomovski Z., V. Feliu, V. Kiryakova, YangQuan Chen, Y. Luchko, W. Kosinski

**Main areas:**

Fractional Calculus, Fractional Fourier Transform, Fractional Stochastic Processes

**Specific areas:**

Automatic Control, Engineering Electronics, Electromagnetism, Fractional Filters, Fractional Order Modelling and Control in Biomedical Engineering, Fractional Phase-Locked Loops, Fractional Variational Principles, Mechanics, Physics, Robotics, Signal Processing, Fractional Differential Systems, Thermal Engineering, Viscoelasticity, Other applications of fractional models

Please, visit the Symposium website <https://www.fct.unl.pt/fss09>

for all details about: – Call for papers; – Important dates; – accommodation; – Fee and registration; – Location; – Committees; – Other Conferences; – Lisbon in images

Submissions and contacts, via:

Prof. Manuel Duarte Ortigueira, e-mail: [mduo@fct.unl.pt](mailto:mduo@fct.unl.pt)  
UNINOVA and DEE, Faculdade de Ciencias e Tecnologia da UNL  
Campus da FCT da UNL  
Quinta da Torre, 2829 - 516 Caparica, PORTUGAL

Prof. J.A. Tenreiro Machado, e-mail: [jtm@isep.ipp.pt](mailto:jtm@isep.ipp.pt)  
SEP - Institute of Engineering of Porto,  
Dept. of Electrotechnical Engineering,  
Rua Dr. Antonio Bernardino de Almeida, 4200 - 072 Porto, PORTUGAL

Hoping to see you in Lisbon,

The Organizers