UNIVERSITY OF CALIFORNIA
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Mechatronics, Embedded Systems and Automation (MESA) Lab Presents

Fractional Calculus Day @ UCMerced

http://mechatronics.ucmerced.edu/research/applied-fractional-calculus

Final Program

time	Presenter	Topic	remark
09:00-09:10	YangQuan Chen	Welcome and introduction	
09:10-09:30	George Chiu	Introduction to NSF ENG/CMMI/CS programs	
09:30-10:30	Francesco Mainardi Giovanna Babini	Fractional relaxation and diffusions equations of distributed order Q/A on Francesco Mainardi: Introduction to Dr. Mainardi's traits as a leading scientist in fractional calculus	
10:30-11:15	Igor Podlubny	Building fractional-order models: Data fitting using solutions of fractional differential equations	
11:15-12:00	Nickolay Korabel	Random walk through Anomalous Processes: some applications of Fractional Calculus	
12:00-13:00	Lunch break, free pizza/soda for all participants		
13:00-14:00	Eric Brown	Simulating shear thickening fluids with fractional derivatives	
14:00-15:00	Christopher T. Kello	Scaling Laws in Cognitive Science	
15:00-15:20	Yanbao Ma	Fractional Calculus: A Possible Solution for Non-Fourier Heat Transfer Modeling?	
15:20-15:40	Zhuo Li	Fractional order relay feedback experiments for MIMO process identification and decoupler autotuning	with video demo
15:40-16:00	Chun Yin	Energy optimization by fractional order extremum-seeking: three classes of methods and experimental comparisons for photovoltaic and lighting systems	with live demo
16:00-16:20	Break		
16:20-16:40	Jiaguo Liu	Study on a fractional model of viscoelasticity of human cranial bone	
16:40-17:20	YangQuan Chen	“Mechatronics meets fractional calculus” and “ME280: Fractional Order Mechanics”	
Wrap up			

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Presents

Fractional Calculus Day @ UCMerced

http://mechatronics.ucmerced.edu/research/applied-fractional-calculus
(Please email RSVP to Prof. YangQuan Chen if you plan to attend by June 10th, Monday)

Organizer:

Prof. YangQuan Chen, ME/EECS/SNRI/UCSolar, School of Engineering, E: ychen53@ucmerced.edu

When and Where:

June 12, 2013. Wednesday, 9AM-5PM.
MESA LAB @ 4225 N. Hospital Rd., Atwater, CA 95301. Tel: (209)-2284398

Why you should attend?

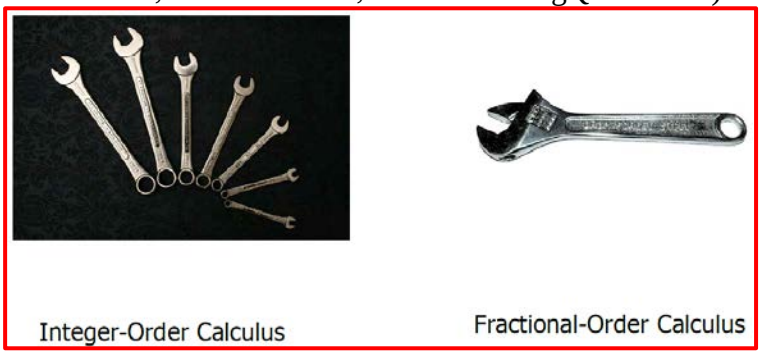
Fractional calculus (FC) is about differentiation or integration of non-integer orders. The concept of fractional calculus has tremendous potential to change the way we see, model, and control the nature around us. Using integer order calculus, behaviors of many complex systems are being said to be "anomalous" such as "anomalous relaxation", "anomalous diffusion" etc. It has already been known that "anomalous is normal" from observation and modeling point of view if fractional calculus is used. Meanwhile, beneficial uses of the mathematical tool of fractional calculus from engineering point of view are being shown and (hopefully) fractional calculus will become an enabler for new science discoveries.

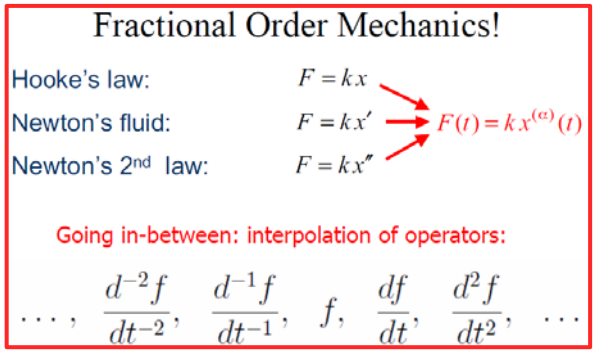
If you wish to do potentially transformative research using this new tool of FC, **FC Day @ UCMerced** event is for you!

If you wish to meet ALL top 3 researchers in the field of FC (per http://scholar.google.com/citations?view_op=search_authors&hl=en&mauthors=label:fractional_calculus) in one room in a full day interaction, **FC Day @ UCMerced** event is for you!

Confirmed Speakers:

- Prof. George Chiu, Program Director, Control Systems/CMMI/ENG, NSF.
- Professor Francesco MAINARDI, Department of Physics, University of Bologna, Via Irnerio 46, I-40126 Bologna, Italy.
- Professor Igor Podlubny, BERG Faculty, Technical University of Kosice, Slovakia.
- Professor Eric Brown, Dept. of Physics, School of Natural Sciences, UC Merced, California, USA.
- Dr. Nickolay Korabel, Dept. of Physics, School of Natural Sciences, UC Merced, California, USA.
- Professor Christopher T. Kello, Cognitive Mechanics Lab, School of Social Sciences, Humanities and Arts, UC Merced, California, USA.
- Other MESA LAB AFC (Applied Fractional Calculus) Group members (Prof. Jiaguo Liu, Chun Yin, Zhuo Li, Brandon Stark, and Prof. YangQuan Chen)





More information on fractional order mechanics: www.asmeconferences.org/IDETC2013/Workshops.cfm (click **W6**)