

MESA (Mechatronics, Embedded Systems and Automation) Lab Presents A Research Seminar at The Applied Fractional Calculus (AFC) Workshop Series

Date/Time/Place: 05/19/2014, 4-6PM, MESA Lab (Room 820), 4225 N. Hospital Rd., Atwater, CA 95301. T: 209-2598023

Title: Target Search

Abstract: Malaysia airlines MH370 had been missing for nearly two months and haven't found. This prompted us to study the new search methods and search techniques. Preliminary experiments show that the efficiency of traditional/enumeration search is bad, and rand search and Cuckoo search are roughly the same. The times of our search method process/Judge pictures is few. The results can be applied in the military.

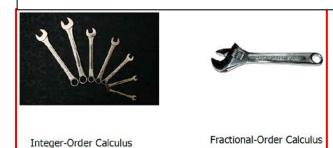
Speaker Name / Contact: Link zlian2@ucmerced.edu Speaker's short biography:



Zhigang Ph.D:2004~2007,School of Information Science and Engineering, East China University of Science and Technology; Post one-Ph.D:2007~2008;Post-doctorate position: Huazhong University of Science and Technology;Postdoctor workstation:KEDA INDUSTRIAL CO.,LTD; Post two-Ph.D:2010~2012;Post-doctorate position: Shanghai Jiao Tong University; Postdoctor workstation: Jiangnan Shipyard(Group),Co.,Ltd. He now is an Advance scholar in MESA Lab, UC Merced. His current study and research focuses on the intelligent algorithm, target search etc.

Key references:

[1] X.-S. Yang; S. Deb (December 2009). Cuckoo search via Lévy flights. World Congress on Nature & Biologically Inspired Computing (NaBIC 2009). IEEE Publications. pp. 210–214. arXiv:1003.1594v1.



Fractional Order Mechanics!
Hooke's law: $F = kx$
Newton's fluid: $F = kx' \xrightarrow{F(t)} F(t) = kx^{(c)}(t)$ Newton's 2 nd law: $F = kx''$
Newton's 2^{nd} law: $F = kx''$
Going in-between: interpolation of operators: $d^{-2}f = d^{-1}f = c = df = d^2f$
$\dots, \frac{d^{-2}f}{dt^{-2}}, \frac{d^{-1}f}{dt^{-1}}, f, \frac{df}{dt}, \frac{d^2f}{dt^2}, \dots$