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

Date/Time/Place: 05/05/2014, 4-6PM, MESA Lab (Room 820), 4225 N. Hospital Rd., Atwater, CA 95301. T: 209-2284398
Title: Fractional Calculus Application in Human-in-the-Loop (HuIL) System
Abstract: Fractional calculus and its application in human-in-the-loop control system is a meaningful research area. In this presentation, examples of HuIL systems are given, and especially some articles about the fractional order impedance control in rehabilitation robot are introduced, and the simulations in the articles are repeated. At last simulations results and discussions are given.

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Speaker's short biography (with photo): Jiacai Huang, was born in 1977. He received the BS and MS degrees from the Automation school, Jilin University, Jilin, China, in 2000 and 2003, and the PhD degree in control engineering from Jilin University in 2006. He is an associate professor in School of Automation, Nanjing Institute of Technology. He now is a visiting scholar in MESA (Mechatronics, Embedded Systems and Automation) Lab, UC Merced.
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Key reference(s) (if any):
[1] Li W, Sadigh D, Sastry S S, et al. Synthesis for Human-in-the-Loop Control Systems[J]. 2013.
[2] Kobayashi Y, Watanabe T, Seki M, et al. Soft Interaction Between Body Weight Support System and Human Using Impedance Control Based on Fractional Calculus[J]. Advanced Robotics, 2012, 26(11-12): 1253-1269.
[3]Kobayashi Y, Ando T, Watanabe T, et al. Fractional impedance control for reproducing the material properties of muscle[C]//Intelligent Robots and Systems (IROS), 2010 IEEE/RSJ International Conference on. IEEE, 2010: 5498-5504.