**2012 Publication of Dr. YangQuan Chen**

Last updated: 4/14/2012. “\*” corresponding author; “+” student co-author

**Encyclopedia entry:**

* YangQuan Chen, Kevin L. Moore and Hyo-Sung Ahn. “Iterative Learning Control” in [Encyclopedia of the Sciences of Learning](http://www.springerlink.com/content/978-1-4419-1427-9/) Editor: Norbert M. Seel. Springer Science+Business Media, LLC 2012, Part 9, pp. 1648-1652, DOI: 10.1007/978-1-4419-1428-6\_65

**Books:**

* Ying Luo+ and YangQuan Chen\*. “*Fractional Order Motion Controls*” **John-Wiley and Sons, Inc.**, 2012 (Under contract, to appear Fall 2012, 400 pages)
* Zhuang Jiao+, YangQuan Chen\* and Igor Podlubny. “*Distributed-Order Dynamic Systems: Stability, Simulation, Applications and Perspectives*” **SpringerBrief**  <http://www.springer.com/engineering/control/book/978-1-4471-2851-9>
* Haiyang Chao+ and YangQuan Chen\*. “*Remote Sensing and Actuation Using Unmanned Vehicles*” **Wiley-IEEE Press**, 2012 (Under copyediting, to appear summer 2012, 200+ pages) [http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118122763,subjectCd-EE79.html](http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118122763%2CsubjectCd-EE79.html)
* Christophe Tricaud+ and YangQuan Chen\*. “*Optimal Mobile Sensing and Actuation Policies in Cyber-physical Systems*”. **Springer**. ISBN 978-1-4471-2261-6. 2012. (170 pages) <http://www.springer.com/engineering/robotics/book/978-1-4471-2261-6>
* Sheng, Hu+, Chen, YangQuan\* and Qiu, TianShuang. “*Fractional Processes and Fractional-Order Signal Processing*” **Springer**. Series: *Signals and Communication Technology*, 2012. 295 pages. ISBN 978-1-4471-2232-6 <http://www.springer.com/engineering/signals/book/978-1-4471-2232-6>

**Journals Pending (submitted/under review/revised)**

1. Wen Chen\* and YangQuan Chen. A System Transformation-based Robust Iterative Learning Control Synthesized with Sliding-mode Control for Output Tracking. **ISA Transactions**. 2/3/2012 submitted (QG Wang)
2. Zeng, Caibin (43604); Chen, YangQuan\* (14519); Yang, Qigui (53594). Almost sure and moment stability properties of LTI stochastic dynamic systems driven by fractional Brownian motion. **Automatica**. 3/22/2012 submitted.
3. Ke-Cai Cao, YangQuan Chen. “Cooperative Control Design for Nonholonomic Chained Form Systems.” **International Journal of Control.** 1/7/2012 revised.
4. Dali Chen, Hu Sheng, YangQuan Chen\* and Dingyu Xue. “Fractional order variational optical flow model for motion estimation" **Philosophical Transactions of Royal Society A** [rsta.royalsocietypublishing.org](http://rsta.royalsocietypublishing.org/) (paper # RSTA-2012-0148) 3/14/2012 invited) Theme Issue “Fractional Calculus and its Applications” (4/14/2012 submitted)
5. Ying Luo\* (63522), Tao Zhang (26906), Li Zhou (40409), BongJin Lee (86664), Changik Kang (86665), YangQuan Chen (21208). “Pre-Filtering Head-Dependent Adaptive Feed-Forward Compensation for Linear Vibration in Hard-Disc-Drive.” **IFAC Control Engineering Practice**.
6. Ying Luo, Tao Zhang, BongJin Lee, Changik Kang, YangQuan Chen\* (63522, 26906, 86664, 86665, 21208) Disturbance Observer Design with Bode’s Ideal Cut-Off Filter in Hard-Disc-Drive Servo System. ???
7. Chun Yin … **Automatica**
8. S. C. Lee, Yan Li, Hyosung Ahn and YangQuan Chen. “*H\_infty and Sliding Mode Observers for LTI Fractional-Order Dynamic Systems*" **IEEE Transactions on Signal Processing**. Regular Paper. (4/10/2012). T-SP-13664-2012, => Automatica

**Conferences Pending (submitted/under review/revised)**

* CDC2012 (Maui, Hawaii)
	+ Yaojin Xu, Yu-Ping Tian\*, YangQuan Chen (80800, 9173, 21208) Design of Consensus Protocol for Nonholonomic Systems under Directed Communication Topology. CDC2012
	+ Chun Yin, YangQuan Chen\*, Shou-ming Zhong (87575, 21208, 88599) Design global extremum seeking control with sliding mode for output-feedback global tracking of nonlinear systems
	+ Chun Yin, YangQuan Chen\*, Shou-ming Zhong (87575, 21208, 88599) Chaos Control in a Class of Fractional-order Chaotic Systems via Sliding Mode Control Law
	+ Sara Dadras, Hadi Malek, YangQuan Chen\* (68812, 80997, 21208) Fractional Order Coulomb Friction Compensation: Convergence Analysis and Experimental Validation on a Fractional Horsepower Dynamometer (Code n918j)
	+ Hadi Malek, Sara Dadras, YangQuan Chen\* (80997, 68812, 21208) A Fractional Order Maximum Power Point Tracker: Stability Analysis and Experiments (Code 7w5t4)
	+ Zeng Caibin, YangQuan Chen\*, Qigui Yang (82035, 21208, 90000) Almost sure and moment stability for LTI stochastic dynamic systems driven by fractional Brownian motion
	+ Zeng Caibin, YangQuan Chen\*, Qigui Yang (82035, 21208, 90000) Robust controllability of interval fractional order linear time invariant stochastic systems
* MESA2012 (Suzhou, China)
	+ Ke-Cai Cao; PingWei Fan; YangQuan Chen. “Decision-making of Robots in Distributed Control of Diffusion Process,” Proc. of the IEEE/ASME Int. Conf. on Mechatronics and Embedded Systems and Applications, pp.23-28. July 8-10, 2012, Suzhou, China
	+ Yan Li; YangQuan Chen. “Theory and Implementation of Weighted Distributed Order Integrator,” Proc. of the IEEE/ASME Int. Conf. on Mechatronics and Embedded Systems and Applications, pp.119-124. July 8-10, 2012, Suzhou, China
* Brandon Stark, Calvin Coopmans, YangQuan Chen. “A Framework for Analyzing Human Factors in Unmanned Aerial Systems” Proc. of the 2012 Int. Symposium on Resilient Control Systems (ISRCS2012), SLC, UT, USA. August 2012
* Hadi Malek+, Sara Dadras+, Robert Burt\*, James Cook, YangQuan Chen. "Maximum Power Point Tracking Techniques For Efficient Photovoltaic Microsatellite Power Supply System." 26th Annual AIAA/USU Conference on Small Satellites. 3/19/2012 http://smallsat.org/
* Austin Jensen+\*, Bethany Neilson, Mac McKee, YangQuan Chen. 'Thermal Remote Sensing With An Autonomous Unmanned Aerial Remote Sensing Platform For Surface Stream Temperatures' The IGARSS 2012 #5097. 3/23/2012 accepted. http://www.igarss2012.org/
* Ivo Petras\* and YangQuan Chen. “Fractional-Order Circuit Elements with Memory”, ICCC2012. <http://web.tuke.sk/ICCC/internet.php?param=default>
* Zheng, Jingjing; Li, Yan\*; Liu, Baodong; Chen, YangQuan. “The Lp Stability Analysis of the Basic Functions for Fractional Order Systems.” 24th Chinese Control and Decision Conference. http://www.ccdc.neu.edu.cn/
* Chen, Da-li\*; Chen, YangQuan; Xue, Dingyu; Pan, Feng. “Adaptive Image Enhancement Based on Fractional Differential Mask.” 24th Chinese Control and Decision Conference. http://www.ccdc.neu.edu.cn/
* Chen, Da-li\*; Chen, YangQuan; Xue, Dingyu. “Robust Fractional Order Differentiator.” 24th Chinese Control and Decision Conference. http://www.ccdc.neu.edu.cn/
* IFAC FDA2012 (Nanjing, China)
* (#117) Shuai Hu, Wen Chen, Yangquan Chen. “*Identification of Parameters in Distributed Order Relaxation Process*” hswyy@hhu.edu.cn Institute of Soft Matter Mechanics, Department of Engineering Mechanics, Hohai University, Nanjing, Jiangsu 210098, China
* (#160) Caibin Zeng, Qigui Yang, YangQuan Chen. "*Solving fractional partial differential equations by Fourier transform*" yangQuan.chen@usu.edu "School of Sciences, South China University of Technology, Guangzhou 510640, China" China & USA
* (#231) Zhuang Jiao, YangQuan Chen. "*Stability analysis of fractional-order delay system for the matrix case*" yangQuan.chen@usu.edu "Department of Automation, Tsinghua University, Beijing, 100084, P.R. China" China & USA
* (#286) (Oral) Xiaona Song, YangQuan Chen. "*An LMI approach for H∞ analysis and PID control of fractional-order systems*” xiaona\_97@163.com Electronic and Information Engineering College, Henan University of Science and Technology, 471003 Luo Yang, Henan, P. R. China
* (#159) Caibin Zeng, Qigui Yang, Peng Guo, YangQuan Chen. "*The Langevin equation associated with fractional Brownian motion*" yangQuan.chen@usu.edu "School of Sciences, South China University of Technology, Guangzhou 510640, China" China & USA
* (#023) (Oral) Peng Guo, Caibin Zeng, YangQuan Chen, Changpin Li. ”*A discrete method for fractional Langevin equation driven by fractional Brownian motion*” pengguo7909@yahoo.com.cn Department of Mathematics, Shanghai University, Shanghai 200444, China
* (#122) Xuefeng Zhang, YangQuan Chen . “*Non Existence of Periodic Solutions of Rational Fractional Order Linear Time Invariant Systems*” yangQuan.chen@usu.edu,fushun-info@tom.com "Institute of System Science, Northeastern University, Shenyang, Liaoning, 110004, China 2.Center for Self-Organizing and Intelligent Systems (CSOIS), Electrical and Computer Engineering Department, Utah State University Logan, UT 84322-4120, USA" China & USA
* (#123) Xuefeng Zhang, YangQuan Chen . “*Non Existence of Periodic Solutions of Linear Time Varying Periodic Fractional Order Systems*” yangQuan.chen@usu.edu,fushun-info@tom.com "Institute of System Science, Northeastern University, Shenyang, Liaoning, 110004, China 2.Center for Self-Organizing and Intelligent Systems (CSOIS), Electrical and Computer Engineering Department, Utah State University Logan, UT 84322-4120, USA" China & USA
* (#124) Xuefeng Zhang, YangQuan Chen. “*Controllability and Observability of Fractional Order Linear Time Varying Systems*” yangQuan.chen@usu.edu,fushun-info@tom.com "Institute of System Science, Northeastern University, Shenyang, Liaoning, 110004, China 2.Center for Self-Organizing and Intelligent Systems (CSOIS), Electrical and Computer Engineering Department, Utah State University Logan, UT 84322-4120, USA" China & USA
* (#268) (Oral) Deliang Qian, Jian Xu, YangQuan Chen. "*The Normal Form of the Pitchfork Bifurcation for Fractional-Order Systems*"deliangqian@126.com "School of Aerospace Engineering and Applied Mechanics, Tongji University, Shanghai 200092, P. R. China; 2. Department of Mathematics, Zhongyuan University of Technology, Zhengzhou 450007, P. R. China" China
* (#046) Dali Chen, Dingyu Xue, YangQuan Chen. “*Fractional differentiation-based approach for robust image edge detection*” chendali@ise.neu.edu.cn; xuedingyu@mail.neu.edu.cn, yqchen@ece.usu.edu College of Information Science and Engineering, Northeastern University, Shenyang, Liaoning, 110006 CHINA China
* (#069) (Oral) Xianming Ye, Jiangfeng Zhang, YangQuan Chen, Xiaohua Xia. “*Fractional calculus and analysis and synthesis of the variability of irradiance and PV power time series*” xmye@tuks.co.za Department of Electrical, Electronic and Computer Engineering, University of Pretoria, Pretoria, 0002, South Africa South Africa
* (#091) (Poster) Lili Cao, Baodong Liu, Yan Li and YangQuan Chen. “*Some Fundamental Relaxation Properties of Fractional Order Weighted Distributed Parameter Maxwell Model*” liyan.sdu@gmail.com School of Mathematics, Shandong University, Jinan, Shandong 250061, P. R. China; 2. Center for Self-Organizing and Intelligent Systems (CSOIS), Electrical and Computer Engineering Department, Utah State University, Logan, UT 84322, USA China
* (#090) Fengyu Zhou, Yang Zhao, Yan Li and YangQuan Chen. “*An Implementation of Distributed Order PI Controller and Its Applications to the Wheeled Service Robot”* liyan.sdu@gmail.com School of Mathematics, Shandong University, Jinan, Shandong 250061, P. R. China; 2. Center for Self-Organizing and Intelligent Systems (CSOIS), Electrical and Computer Engineering Department, Utah State University, Logan, UT 84322, USA China
* (#161) Chun Yin, Yangquan Chen, Shouming Zhong. “*Robust stability conditions for fractional-order linear systems with nonlinear uncertain parameters and the fractional order*” yangQuan.chen@usu.edu School of Mathematics Science, University of Electronic Science and Technology of China, Chengdu, China, 610054 China & USA
* (#257) Ke-Cai Cao, Caibin Zeng, Dan Stuart, YangQuan Chen. "F*ractional Order Dynamic Modeling of Crowd Pedestrians*" caokecai@gmail.com "Nanjing University of Posts and Telecommunications, Nanjing, 210003, China" China
* (#269) Sang-Chul Lee, Yan Li, YangQuan Chen, Hyo-Sung Ahn. “*H1 Filtering for Fractional Order Systems*” hyosung@gist.ac.kr "School of Mechatronics, Gwangju Institute of Science and Technology (GIST), 261 Cheomdan-gwagiro, Buk-gu, Gwangju, 500-712 Korea" Korea
* Dingyu Xue and YangQuan Chen. “*OptimFOPID: A MATLAB Interface for Optimum Fractional-order PID Controller Design for Linear Fractional-order Plants.*”

**Journals Published/Accepted**

1. Laurentz Olivier+, Ian Craig\* and YangQuan Chen. “Fractional Order and BICO Disturbance Observers for a Run-of-Mine Ore Milling Circuit.” **Journal of Process Control,** Volume 22, Issue 1, January 2012, Pages 3-10.<http://dx.doi.org/10.1016/j.jprocont.2011.11.001>
2. Ying Luo\*, YangQuan Chen, Hyo-sung Ahn, Youguo Pi, “Fractional Order Periodic Adaptive Learning Compensation for the State-Dependent Periodic Disturbance." **IEEE Transactions on Control Systems Technology**, March 24th, 2011, DOI: [http://dx.doi.org/10.1109 / TCST.2011.2117426](http://dx.doi.org/10.1109%20/%20TCST.2011.2117426) Volume: 20 , [Issue: 2](http://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=6141198)  2012 , Page(s): 465 – 472.
3. Wen Chen\*, Yang-Quan Chen, Chih-Ping Ye+. "Robust Iterative Learning Control via Continuous Sliding-Mode Technique with Validation on an SRV-02 Rotary Plant" **Mechatronics** (2012). doi: <http://dx.doi.org/10.1016/j.mechatronics.2011.12.005>
4. Hyo-Sung Ahn\*, Young-Soo Kim+, YangQuan Chen. “An interval Kalman filtering with minimal conservatism.” **Applied Mathematics and Computation**. 2012. doi: <http://dx.doi.org/10.1016/j.amc.2012.02.050>
5. Zhuang Jiao+ and YangQuan Chen\*. Impulse Response Of A Generalized Fractional Second Order Filter. **Frac. Calc. Appl. Anal. (FCAA)**, vol 15, no. 1, pp. 97–116. DOI: <http://dx.doi.org/10.2478/s13540-012-0007-2>
6. Zhuang Jiao+, Yang Quan Chen\*. “Stability of fractional-order linear time-invariant systems with multiple noncommensurate orders” **Computers & Mathematics with Applications**, In Press, Corrected Proof, Available online 3 November 2011. <http://dx.doi.org/10.1016/j.camwa.2011.10.014>
7. Inés Tejado\*+, S. Hassan HosseinNia, Blas M. Vinagre, Xiaona Song, and YangQuan Chen. “Dealing with fractional dynamics of IP network delays.” **International Journal of Bifurcation Chaos**, Special Issue on “Fractional Dynamics and Control”, IJBC-D-11-00198 (accepted to appear in April issue of 2012) DOI No: <http://dx.doi.org/10.1142/S0218127412500897> Accepted 2011-06-24
8. Yan Li\* and YangQuan Chen. “A fractional order universal high gain adaptive stabilizer.” **International Journal of Bifurcation Chaos**, Special Issue on “Fractional Dynamics and Control”, IJBC-D-11-00171 (accepted to appear in April issue of 2012) DOI No: <http://dx.doi.org/10.1142/S0218127412500812> Accepted 2011-06-16
9. Hu Sheng+, YangQuan Chen\* and Tianshuang Qiu. “Multifractional Property Analysis of Human Sleep EEG Signals.” **International Journal of Bifurcation Chaos**, Special Issue on “Fractional Dynamics and Control”, IJBC-D-11-00170 (accepted to appear in April issue of 2012) DOI No: <http://dx.doi.org/10.1142/S0218127412500800> Accepted 2011-06-12
10. Inés Tejado\*+, Miguel Romero, Blas M. Vinagre, Ángel P. de Madrid, and YangQuan Chen. “Experiences on an internet link characterization and networked control of a smart wheel.” **International Journal of Bifurcation Chaos**, Special Issue on “Fractional Dynamics and Control”, IJBC-D-11-00161 (accepted to appear in April issue of 2012) DOI No: <http://dx.doi.org/10.1142/S0218127412300157> Accepted 2011-06-10
11. HongGuang Sun+\*, Wen Chen, ChangPin Li and YangQuan Chen. “Finite difference schemes for variable-order time fractional diffusion equation.” **International Journal of Bifurcation Chaos**, Special Issue on “Fractional Dynamics and Control”, IJBC-D-11-00187 (accepted to appear in April issue of 2012) DOI No: <http://dx.doi.org/10.1142/S021812741250085X> Accepted 2011-06-04
12. Luo, Ying\*; Chen, YangQuan. “Stabilizing and Robust FOPI Controller Synthesis for First Order Plus Time Delay Systems” **Automatica**. 2012 (accepted)
13. Ying Luo\* and YangQuan Chen. "Fractional Order Adaptive Feed-Forward Cancellation for Disturbances." **Asian Journal of Control**. FO-11-0251.R1,
14. Zhuang Jiao, YangQuan Chen\* and Yisheng Zhong. Stability Analysis of Linear Time-Invariant Distributed-Order Systems. **Asian Journal of Control**. (revised/provisionally accepted)
15. Dali Chen, YangQuan Chen\* and Dingyu Xue. “1-D and 2-D digital fractional order Savitzky-Golay

Differentiator”. **Signal, Image and Video Processing** (Springer, <http://www.springer.com/engineering/signals/journal/11760>) (accepted 2012) DOI: <http://www.doi.org/10.1007/s11760-012-0334-0> (4/25/2012)

1. Hu Sheng, YangQuan Chen and Tianshuang Qiu. 'Tracking Performance and Robustness Analysis of Hurst Estimators for Multifractional Processes'. **IET Signal Processing**. Accepted. 3/21/2012.

**Conferences Published/Accepted**

1. Ying Luo (63522), Tao Zhang (26906), Li Zhou (40409), BongJin Lee (86664), Changik Kang (86665), YangQuan Chen\* (21208). Pre-Filtering Head-Dependent Adaptive Feed-Forward Compensation for Linear Vibration in Hard-Disc-Drive. American Control Conference. <http://a2c2.org/conferences/acc2012/index.php>
2. Zhuang Jiao (82251), YangQuan Chen\* (21208), Yisheng Zhong (17363). “Stability Condition of Linear Time-Invariant Distributed-Order Dynamic Systems”. American Control Conference. <http://a2c2.org/conferences/acc2012/index.php>
3. Austin Jensen+\*, Bethany Neilson, Mac McKee, YangQuan Chen. 'Thermal Remote Sensing With An Autonomous Unmanned Aerial Remote Sensing Platform For Surface Stream Temperatures' The IGARSS 2012 #5097. 3/23/2012 accepted. <http://www.igarss2012.org/>
4. Johannes Kaplanek+, Austin Jensen+, YangQuan Chen\*. 'Airworthiness enhancement by a forward looking camera for a low cost UAV-based personal remote sensing platform' The IGARSS 2012 #5163. 3/23/2012 accepted. http://www.igarss2012.org/
5. Hadi Malek+, Sara Dadras+, Robert Burt\*, James Cook, YangQuan Chen. "Maximum Power Point Tracking Techniques For Efficient Photovoltaic Microsatellite Power Supply System." 26th Annual AIAA/USU Conference on Small Satellites. 3/19/2012 http://smallsat.org/
6. Zheng, Jingjing; Li, Yan\*; Liu, Baodong; Chen, YangQuan (72090; 92113; 28080; 19728). “The *Lp* Stability Analysis of the Basic Functions for Fractional Order Systems.” 24th Chinese Control and Decision Conference. <http://www.ccdc.neu.edu.cn/>
7. Chen, Da-li\*; Chen, YangQuan; Xue, Dingyu; Pan, Feng (87580; 19728; 89398; 25544). “Adaptive Image Enhancement Based on Fractional Differential Mask.” 24th Chinese Control and Decision Conference. <http://www.ccdc.neu.edu.cn/>
8. Chen, Da-li\*; Chen, YangQuan; Xue, Dingyu (87580; 19728; 89398). “Robust Fractional Order Differentiator.” 24th Chinese Control and Decision Conference. <http://www.ccdc.neu.edu.cn/>
9. Ivo Petras and YangQuan Chen. “Fractional-Order Circuit Elements with Memory”, ICCC2012. <http://web.tuke.sk/ICCC/internet.php?param=default>
10. Brandon Stark+, Calvin Coopmans+, YangQuan Chen\*. “Concept of Operations for Personal Remote Sensing Unmanned Aerial Systems.” In Proc. Of the International Conference on Unmanned Aerial Vehicles (ICUAS), Philadelphia, PA, June 14-17, 2012. (accepted)
11. Zhuo Li+, Nathan Hoffer+, Brandon Stark+, YangQuan Chen\*. “Design, Modeling and Validation of a T-tail Unmanned Aerial Vehicle”. In Proc. Of the International Conference on Unmanned Aerial Vehicles (ICUAS), Philadelphia, PA, June 14-17, 2012. (accepted)
12. Jinlu Han+, Yaojin Xu+, Long Di+, YangQuan Chen\*. “Low-cost Multi-UAV Technologies for Contour Mapping of Nuclear Radiation Field”. In Proc. Of the International Conference on Unmanned Aerial Vehicles (ICUAS), Philadelphia, PA, June 14-17, 2012. (accepted)
13. Brandon Stark, Calvin Coopmans, YangQuan Chen. “A Framework for Analyzing Human Factors in Unmanned Aerial Systems” ISRCS2012, SLC, UT, USA. August 2012

**Editorials:**

1. Editorial. GUEST – EDITORS:Virginia Kiryakova, Yury Luchko, Francesco Mainardi, Blas Vinagre, Igor Podlubny, YangQuan Chen. SPECIAL ISSUE Dedicated to 80th Anniversary of Professor Rudolf Gorenflo. **Fractional Calculus and Applied Analysis**. Volume 14 / 2011 DOI: 10.2478/s13540-011-0001-0.
2. Editorial. **International Journal of Bifurcation Chaos**, Special Issue on “Fractional Dynamics and Control”, (4 pages. To appear in April issue of 2012)

**Patent Disclosures Filed**

1. Austin Jensen, YangQuan Chen and Mac McKee. D12032 *UGEAR Encoder for the UAV platform AggieAir* 2/1/2012 <https://inventusu.ttoportal.com/Default.aspx>