天津大学电气自动化与信息工程学院
School of Electrical and Information Engineering, Tianjin University

首页 (../../index.htm) 学院概况 (../../xygk.htm) | 新闻中心 (../../xwzx.htm) | 师资队伍 (../../szdw.htm) | 本科生教育 (../../bksjy.htm) | 研究生教育 (../../yjsjy.htm) | 科学研究 (../../kxyj.htm) | 学生工作 (../../xsgz.htm) | 党建园地 (../../djyd.htm) | 校友之家 (../../xyzj.htm)

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Date：2020年08月01日

个人资料：

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学科专业：控制科学与工程

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主要经历：

(1) 2009.03-2012.12 东南大学 自动化学院，博士

(2) 2010.10-2011.11 澳大利亚皇家墨尔本理工大学 电气工程学院，联合培养博士

(3) 2012.12-2016.08 天津大学 电气与自动化工程学院，讲师

(4) 2014.12-2016.08 美国罗德岛大学 电气与计算机工程学院，博士后

(5) 2015.03-至今 天津大学 电气与自动化工程学院，硕士生导师

(6) 2016.09-至今 天津大学 电气与自动化工程学院，副教授

主要研究方向：

(1) 非线性控制理论及应用

(2) 智能自适应控制

(3) 先进控制方法的应用研究

主要科研项目：

主持项目：

(1) 2014.01-2016.12国家自然科学基金青年科学基金"终端滑模控制理论研究及在高超声速飞行器中的应用"

(2) 2014.05-2016.04国家自然科学基金国际合作项目"基于神经计算的终端滑模控制方法及在风能系统中的应用"

(3) 2014.04-2017.03天津市自然科学基金"挠性高超声速飞行器干扰估计与复合控制"

(4) 2016.04-2017.04中美计算机联合研究中心开放课题"基于神经网络的自适应动态规划方法研究"

(5) 2013.01-2013.12天津大学自主创新基金战略布局项目" XX仿真系统研发 (http://kj.tju.edu.cn/tech/project/project.do?method=detail&id=29437)"

(6) 2013.01-2016.12天津大学自主创新基金" 终端滑模控制问题研究"

参加项目： 国家自然科学基金重点项目1项，重大国际合作交流项目1项，面上项目3项，青年基金项目2项，天津市自然科学基金面上项目1项

代表性论著、学术著作：

第一作者期刊论文：

(1) Chaoxu Mu, Zhen Ni, Changyin Sun, Haibo He. Air-breathing hypersonic vehicle tracking control based on adaptive dynamic programming. *IEEE Transactions on Neural Networks and Learning Systems*, 2016, DOI:10.1109/TNNLS.2016.2516948. (SCI, IF: 4.854,1区)

(2) Chaoxu Mu, Zhen Ni, Changyin Sun, Haibo He. Data-driven tracking control with adaptive dynamic programming for a class of continuous-time nonlinear systems. *IEEE Transactions on Cybernetics*, 2016, DOI:10.1109/TCYB.2016.2548941. (SCI, IF: 4.943,2区)

(3) Chaoxu Mu, Wei Xu, Changyin Sun. On switching manifold design for terminal sliding mode control. *Journal of the Franklin Institute*, vol. 353, no.7, 1553-1572, 2016. (SCI, IF: 2.327,2区)

(4) Chaoxu Mu, and Changyin Sun. A new finite time convergence condition for super-twisting observer based on lyapunov analysis. *Asian Journal of Control*, 17(3), 1050-1060, 2015. (SCI, IF: 1.556,3区)

(5) Chaoxu Mu, Changyin Sun, Aiguo Song, Hualong Yu. Iterative GDHP-based approximate optimal tracking control for a class of discrete-time nonlinear systems. *Neurocomputing*, 2016, DOI: 10.1016/j.neucom.2016.06.059. (SCI, IF: 2.392,3区)

(6) Chaoxu Mu, Changyin Sun, Wei Xu. Fast sliding mode control on air-breathing hypersonic vehicles with transient response analysis.*Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering*, 230 (1), 23-34, 2016. (SCI, IF: 0.889,4区)

(7) Chaoxu Mu, Weiqiang Liu, Wei Xu, Md. Rabiul Islam. Observer-based load frequency control for island micro-grid with photovoltaic power.*International Journal of Photoenergy,*In Press, 2017. (SCI, IF: 1.226, 3区)

(8) Chaoxu Mu, Qun Zong, Bailing Tian, Wei Xu. Continuous sliding mode controller with disturbance observer for hypersonic vehicles.*IEEE/CAA Journal of Automatica Sinica*, vol. 2, no. 1, pp. 45-55, 2015. (EI，自动化学报英文版)

(9) Chaoxu Mu, Xinghuo Yu, Changyin Sun. Phase trajectory and transient analysis for nonsingular terminal sliding mode c control systems.*Acta Automatica Sinica*, 2013, 39(6): 902-908. (EI，自动化学报中文版)

通讯作者期刊论文：

(10) Ding Wang, Chaoxu Mu*, Qichao Zhang, Derong Liu. Event-based input-constrained nonlinear H_infty state feedback with adaptive critic and neural implementation. Neurocomputing, 2016, 2016, vol. 214, pp. 848-856. (SCI, IF: 2.392,3区)

(11) Xu Wei, Chaoxu Mu*, Jin Jianxun. Novel linear iteration maximum power point tracking algorithm for photovoltaic power generation.*IEEE Transactions on Applied Superconductivity*, 2014, 24(5), pp. 1-6. (SCI, IF: 1.235,4区)

(12) Xu Wei, Jianqiao Zhou, Chaoxu Mu*. Improved model predictive current control strategy based rotor flux for linear induction machines.*IEEE Transactions on Applied Superconductivity*, 2016, DOI: 10.1109/TASC.2016.2594805 (SCI, IF: 1.235,4区)

主要合作期刊论文：

(13) Ding Wang, Chaoxu Mu, Haibo He, Derong Liu. Event-driven adaptive robust control of nonlinear systems with uncertainties through NDP strategy.*IEEE Transactions on Systems, Man, and Cybernetics: Systems*, 2016, DOI: 10.1109/TSMC.2016.2592682. (SCI, IF: 1.598,2区)

(14) Hualong Yu, Chaoxu Mu, Changyin Sun, Wankou Yang, Xibei Yang, Xin Zuo. Support vector machine-based optimized decision threshold adjustment strategy for classifying imbalanced data.*Knowledge-Based Systems*, vol. 76, March 2015, pp. 67-78. (SCI, IF: 3.325,2区)

(15) Yufei Tang, Chaoxu Mu, and Haibo He. SMES based damping controller design using fuzzy-grhdp considering transmission delay.*IEEE Transactions on Applied Superconductivity*, vol. 26, no. 7, pp. 1-7, 2016. (SCI, IF: 1.235,4区)

(16) Ding Wang, Derong Liu, Chaoxu Mu, and Hongwen Ma. Decentralized guaranteed cost control of interconnected systems with uncertainties: A learning-based optimal control strategy. *Neurocomputing*, 2016, DOI: 10.1016/j.neucom.2016.06.020. (SCI, IF: 2.392,3区)

(17) Ding Wang, Chao Li, Derong Liu, Chaoxu Mu. Data-based robust optimal control of continuous-time affine nonlinear systems with matched uncertainties.*Information Sciences*, vol. 366, October 2016, pp. 121–133. (SCI, IF: 3.364,2区)

(18) Yi Lei, Wei Xu, Chaoxu Mu, et.al. New hybrid damping strategy for grid-connected photovoltaic inverter with LCL filter. *IEEE Transactions on Applied Superconductivity*, vol. 24, no. 5, pp. 1-8, Oct. 2014. (SCI, IF: 1.235,4区)

(19) Changyin, Sun and Chaoxu, Mu and Yao, Yu. Some control problems for near space hypersonic vehicles.*Acta Automatica Sinica*, vol. 39, no. 11, pp. 1901-1913, 2013. (EI)

(20) Lei Chen, Yan Yan, Chaoxu Mu and Changyin Sun. Characteristic model-based discrete-time sliding mode control for spacecraft with variable tilt of flexible structures. *IEEE/CAA Journal of Automatica Sinica*, vol. 3, no. 1, pp. 42-50, 2016. (EI)

(21) Ding Wang, Chaoxu Mu, Derong Liu. Data-driven nonlinear near-optimal regulation based on iterative neural dynamic programming.*Acta Automatica Sinica*, Paper ID: AAS-CN-2016-0272, accepted on 17 May, 2016. (EI)

第一作者会议论文：

(22) C. Mu, Y. Tang, and H. He, "Observer-based Sliding Mode Frequency Control for Micro-Grid with Photovoltaic Energy Integration," in Proc. IEEE Power and Energy Society General Meeting (PESGM'16), Boston, MA, USA, July 17 - 21, 2016.

(23) C. Mu, W. Xu, X. Yu and C. Sun, "A continuous sliding mode controller for the PMSM speed regulation based on disturbance observer," the 40th Annual Conference of the IEEE Industrial Electronics Society (IECON), Dallas, TX, 2014, pp. 28-33.

(24) C. Mu, W. Xu and C. Sun, "Adaptive sliding mode control for the speed regulation of PMSMs with load change," 17th International Conference on Electrical Machines and Systems (ICEMS), Hangzhou, 2014, pp. 549-555.

(25) C. Mu, X. Yu and C. Sun, "Analysis on transient time of nonsingular terminal sliding mode control," 32nd Chinese Control Conference, Xi'an, 2013, pp. 3194-3198.

(26) C. Mu, C. Sun and L. Xue, "Design of fast sliding mode control on air-breathing hypersonic vehicles," 32nd Chinese Control Conference, Xi'an, 2013, pp. 805-810.

(27) C. Mu, C. Sun, C. Qian and R. Zhang, "Super-twisting sliding mode control based on Lyapunov analysis for the cursing flight of hypersonic vehicles," 10th IEEE International Conference on Control and Automation (ICCA), Hangzhou, 2013, pp. 522-527.

学术论著：

(1) 高超声速飞行器终端滑模控制技术（第二作者）.北京:科学出版社, 2014,ISBN: 9787030393876.

专利：

(1) 基于连续终端滑模技术的永磁同步电机速度复合控制方法（第一发明人），发明专利，专利号：201410520288

(2) 一种二阶系统有限时间滑模控制器的通用设计方法（第一发明人），发明专利，专利号：2015100844298

(3) 直线感应电机驱动特性分析等效电路及分析方法（第二发明人），发明专利，专利号: 201410131650X.

(4) 一种基于模糊PI算法的微电网并网逆变器的控制方法（第二发明人），发明专利，专利号: 20141014056

主要讲授课程：

(1) 自动控制原理A（本科生）

(2) 鲁棒控制（硕士生）

主要学术成就、奖励及荣誉：

(1) 2011年高等学校科学研究优秀成果奖（科学技术）二等奖，第5完成人

其他（社会兼职等）：

(1) 2014-至今 中国自动化学会青年工作委员会委员

(2) 2015-至今 中国自动化学会控制理论专业委员会非连续控制学组委员，IEEE Member

(3) 2016-至今 中国自动化学会自适应动态规划专委会委员

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