

Yutao Tang

Resume

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Experience

- 2020.07 – **Associate Professor**, *School of Artificial Intelligence, Beijing University of Posts and Telecommunications*, Beijing, P.R. China.
- 2018.12 – 2020.07 **Associate Professor**, *School of Automation, Beijing University of Posts and Telecommunications*, Beijing, P.R. China.
- 2014.07 – 2018.12 **Lecturer**, *School of Automation, Beijing University of Posts and Telecommunications*, Beijing, P.R. China.

Education

- 2009.09 – 2014.07 **Ph.D.**, *Key Laboratory of Systems and Control, Chinese Academy of Sciences*.
Majoring in Operations Research and Cybernetics
Thesis: Hierarchical Control and Coordination of Nonlinear and Multi-agent Systems
- 2005.09 – 2009.07 **B.Sc.**, *College of Sciences, Harbin Engineering University*.
Majoring in Applied Mathematics

Research Interests

Nonlinear Control, Distributed Optimization, Robotics, Machine Learning

Funded Projects

- 2020.01 – 2023.12 Optimal coordination for nonlinear multi-agent systems by a hierarchical design and its applications (National Natural Science Foundation of China), No. 61973043
- 2016.01 – 2018.12 Coordinated control and optimization of nonlinear multi-agent systems via generalized output regulation (National Natural Science Foundation of China), No. 61503033
- 2015.01 – 2016.10 Coordinated control and optimization of nonlinear multi-agent systems (Fundamental Research Funds for the Central Universities), No. 24820152015RC36

Academic Activities

- Membership IEEE Member (2014 –)
IEEE Student Member (2012– 2013)
IEEE Control Systems Society Member (2012 –)
Member of TCCT Nonlinear Systems and Control Group (2015 –)
- Professional Service Session Organizer and Chair, “Nonlinear Control and Optimization”, 39th Chinese Control Conference (CCC), Shenyang, 2020

Session Organizer and Chair, "Distributed Optimization and Computation", 38th Chinese Control Conference (CCC), Guangzhou, 2019

Session Co-Chair, "Multi-agent Systems and Distributed Control", 37th Chinese Control Conference (CCC), Wuhan, 2018

Session Organizer and Chair, "Multi-agent Coordination and Optimization", International Symposium on Mathematical Theory of Networks and Systems (MTNS), Hong Kong, 2018

Session Chair, "Multi-agent Systems and Distributed Control", 36th Chinese Control Conference (CCC), Dalian, 2017

Program Committee Member, Symposium of Chinese Nonlinear Systems and Control, Beijing, 2016

Session Organizer and Co-Chair, "Recent Developments in Nonlinear Control", 35th Chinese Control Conference (CCC), Chengdu, 2016

Session Co-Chair, "Systems Theory and Control Theory", 31st Chinese Control Conference (CCC), Hefei, 2012

Journal Reviewer Automatica ◊ Electronics Letters ◊ Evolutionary Intelligence ◊ IEEE Access ◊ IEEE Transactions on Circuits and Systems I: Regular Papers ◊ IEEE Transactions on Control of Network Systems ◊ IEEE Transactions on Cybernetics ◊ IEEE Transactions on Neural Networks and Learning Systems ◊ IEEE Transactions on Systems, Man, and Cybernetics: Systems ◊ IET Control Theory and Applications ◊ IET Generation, Transmission and Distribution ◊ International Journal of Control ◊ International Journal of Control, Automation and Systems ◊ International Journal of Robust and Nonlinear Control ◊ International Journal of Systems Science ◊ ISA Transactions ◊ Kybernetika ◊ Nonlinear Analysis: Hybrid Systems ◊ Systems & Control Letters ◊ IEEE/CAA Journal of Automatica Sinica ◊ Acta Automatica Sinica ◊ Chinese Journal of Computers ◊ Control Theory and Technology ◊ Journal of Systems Science and Complexity

Conference Reviewer American Control Conference ◊ Chinese Control Conference ◊ IEEE Conference on Decision and Control ◊ IEEE International Conference on Control and Automation ◊ IEEE International Conference on Robotics and Automation ◊ International Conference on Control, Automation, Robotics and Vision ◊ International Symposium on Mathematical Theory of Networks and Systems

Books

Y. Tang. Abstraction-based Hierarchical Control of Complex Systems and its Applications. Beijing, Science Press, 2018. (in Chinese)

Journal Papers

- Y. Tang, X. Wang. Optimal output consensus for nonlinear multi-agent systems with both static and dynamic uncertainties. *IEEE Transactions on Automatic Control*, accepted.
- Y. Tang. Distributed optimal steady-state regulation for high-order multi-agent systems with external disturbances. *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, accepted.
- Y. Tang. Multi-agent optimal consensus with unknown control directions. *IEEE Control Systems Letters*, 5(4): 1201–1206, 2021.
- Y. Tang, Z. Deng, and Y. Hong. Optimal output consensus of high-order multi-agent systems with embedded technique. *IEEE Transactions on Cybernetics*, 49(5): 1768–1779, 2019.
- Y. Tang. Distributed optimization for a class of high-order nonlinear multi-agent systems with unknown dynamics. *International Journal of Robust and Nonlinear Control*, 28(17): 5545–5556, 2018.
- Y. Tang, P. Yi. Distributed coordination for a class of nonlinear multi-agent systems with regulation constraints. *IET Control Theory & Applications*, 12(1): 1–9, 2018.
- W. Song, Y. Tang, Y. Hong, and X. Hu. Relative attitude formation control of multi-agent systems. *International Journal of Robust and Nonlinear Control*, 27(18): 4457–4477, 2017.
- Y. Tang. Coordination of heterogeneous nonlinear multi-agent systems with prescribed behaviors. *International Journal of Control*, 90(10): 2197–2205, 2017.
- Y. Tang. Output average consensus over heterogeneous multi-agent systems via two-level approach. *Kybernetika*, 53(2): 282–295, 2017.
- Y. Tang. Robust consensus tracking of heterogeneous multi-agent systems under switching topologies. *Journal of Systems Science and Complexity*, 19(5):1226–1237, 2016.
- Y. Tang. Coordination of multi-agent systems under switching topologies via disturbance observer based approach. *International Journal of Systems Science*, 47(16):3900-3907, 2016.
- Y. Tang, Y. Hong, and X. Wang. Distributed output regulation for a class of nonlinear multi-agent systems with unknown-input leaders. *Automatica*, 62(1):154-160, 2015.
- Y. Tang. Output consensus of nonlinear multi-agent systems with unknown control directions. *Kybernetika*, 51(2):335-346, 2015.
- Y. Tang. Leader-following coordination problem with an uncertain leader in a multi-agent system. *IET Control Theory & Applications*, 8(10): 773-781, 2014.
- Y. Tang, Y. Hong. Hierarchical control design of multi-agent networks with approximate simulation. *Acta Automatica Sinica*, 39(6): 868-874, 2013.
- L. Gao, Y. Tang, W. Chen and H. Zhang. Consensus seeking in multi-agent systems with an active leader and communication delays. *Kybernetika*, 47 (5):773-789, 2011.

Conference Papers

- Y. Tang. Distributed optimization for uncertain linear multi-agent systems by integral control. 16th IEEE International Conference on Control & Automation (ICCA), Sapporo, 2020.
- K. Zhu, H. Zhu, and Y. Tang. On the boundedness of subgradients in distributed optimization. In Proc. of 39th Chinese Control Conference (CCC): 4912–4917, Shenyang, 2020.
- Y. Tang. Distributed optimization for multi-agent systems with unknown high-frequency-gain signs. In Proc. of 39th Chinese Control Conference (CCC): 599–603, Shenyang, 2020.
- Y. Tang, H. Zhu, and X. Lv. Distributed optimization for discrete-time linear multi-agent systems. In Proc. of 38th Chinese Control Conference (CCC): 5665–5669, Guangzhou, 2019.
- Y. Tang, H. Zhu. Distributed optimization for high-order nonlinear multi-agent systems with unknown dynamics. In Proc. of 37th Chinese Control Conference (CCC), Wuhan, 2018.
- Y. Tang, X. Wang. Optimal output consensus for a class of uncertain nonlinear multi-agent systems. In Proc. of 2018 American Control Conference (ACC): 2059–2064, Milwaukee, 2018.
- Y. Tang, H. Zhu. Optimal steady-state regulation of multi-agent systems with embedded technique. In Proc. of 23rd International Symposium on Mathematical Theory of Networks and Systems (MTNS): 101–103, Hong Kong, 2018.
- Y. Tang. Distributed optimal steady-state regulation in linear multi-agent systems. In Proc. of 36th Chinese Control Conference (CCC): 8524–8529, Dalian, 2017.
- Y. Tang. Output regulation with unknown-input exosystems. In Proc. of 35th Chinese Control Conference (CCC): 631–636, Chengdu, 2016.
- Y. Tang. A hierarchical control approach for average consensus over heterogeneous multi-agent systems. In Proc. of 35th Chinese Control Conference (CCC): 7622–7627, Chengdu, 2016.
- Y. Tang, Y. Hong, and P. Yi. Distributed optimization design based on passivity technique. In Proc. of 12th IEEE International Conference on Control & Automation (ICCA): 732–737, Kathmandu, 2016.
- Y. Tang. Coordination of heterogeneous nonlinear multi-agent systems with prescribed behaviors. In Proc. of 34th Chinese Control Conference (CCC): 7451–7456, Hangzhou, 2015.
- Y. Tang, Y. Hong. Hierarchical control design of nonlinear systems based on approximate simulation. In Proc. of 32nd Chinese Control Conference (CCC): 285–290, Xi'an, 2013.
- Y. Tang, Y. Hong. Hierarchical control design of nonlinear systems based on approximate simulation. In Proc. of 12th International Conference on Control Automation Robotics & Vision (ICARCV): 566–571, Guangzhou, 2012.
- Y. Tang, Y. Hong. Hierarchical control design of multi-agent networks with approximate simulation. In Proc. of 31st Chinese Control Conference (CCC): 285–290, Hefei, 2012.
- Y. Tang, Y. Hong. Control design for flexible hierarchical formation of multiple robots, In Proc. of 10th World Congress on Intelligent Control and Automation (WCICA): 3595–3600, Beijing, 2012.
- Y. Tang, Y. Hong. Tracking a high-dimensional active leader of switching multi-agent systems with communication delays. In Proc. of 30th Chinese Control Conference (CCC): 4926–4931, Yantai, 2011.