

講演会のご案内

An Adaptive Robust Model Predictive Control Framework for Constrained Linear Systems

講師: **Yang Shi**

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Schedule: 12月11日 10 : 00-11 : 30 (Tokyo Time)
[12月10日 17 : 00-18 : 30 (Vancouver Time)]

Place: ZOOM Online ID: 964 2597 2078 (pw: 203117)

Abstract: Model predictive control (MPC) is a promising paradigm for high-performance and cost-effective control of complex dynamic systems. This talk will introduce a recent result on adaptive robust model predictive control (MPC) for a class of constrained linear systems with unknown model parameters. By proactively designing the online estimation mechanism and constructing the tube-based adaptive MPC scheme, the enhanced performance can be achieved compared to the robust tube MPC method. Some existing challenges and future research directions will be discussed.



Biography: Yang SHI received the Ph.D. degree in electrical and computer engineering from the University of Alberta, Edmonton, AB, Canada, in 2005. From 2005 to 2009, he was an Assistant Professor and Associate Professor in the Department of Mechanical Engineering, University of Saskatchewan, Saskatoon, Saskatchewan, Canada. In 2009, he joined the University of Victoria, and now he is a Professor in the Department of Mechanical Engineering, University of Victoria, Victoria, British Columbia, Canada. His current research interests include networked and distributed systems, model predictive control (MPC), cyber-physical systems (CPS), robotics and mechatronics, control of autonomous systems (AUV and UAV), and energy system applications.

Dr. Shi received the University of Saskatchewan Student Union Teaching Excellence Award in 2007. At the University of Victoria, he received the Faculty of Engineering Teaching Excellence in 2012, and the Craigdarroch Silver Medal for Excellence in Research in 2015.

He received the JSPS Invitation Fellowship (short-term) in 2013, the 2017 IEEE Transactions on Fuzzy Systems Outstanding Paper Award, the Humboldt Research Fellowship for Experienced Researchers in 2018. He is a member of the IEEE IES Administrative Committee and Chair of IEEE IES Technical Committee on Industrial Cyber-Physical Systems. Currently, he is Co-Editor-in-Chief for IEEE Transactions on Industrial Electronics; he also serves as Associate Editor for Automatica, IEEE Trans. Control Systems Technology, IEEE/ASME Trans. Mechatronics, IEEE Trans. Cybernetics. He is a Fellow of IEEE, ASME and CSME, and a registered Professional Engineer in British Columbia, Canada. He is a Fellow of Engineering Institute of Canada (EIC).