

学术报告会

时间: 2023年7月31日 10:30

地点: 电信群楼2-410会议室

Event-Triggered Model Predictive Control: Delayed Triggering and Stochastic Verification

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Abstract:

In this talk, two types of event-triggered MPC control approaches are introduced. A delayed triggering strategy and a stochastic verification scheme are proposed to reduce the average triggering rate, fully utilize the nominal optimal control, and link verification and triggering. Under mild conditions, recursive feasibility and closed-loop robust stability are guaranteed. Examples are used to show the effectiveness and merits of the proposed approach.

Biography:

Zhan Shu received his B.Eng. degree in Automation from Huazhong University of Science and Technology in 2003, and his PhD degree in Control Engineering from The University of Hong Kong in 2008. For his doctoral research, he received the award for Outstanding Research Postgraduate Student of the University of Hong Kong. He was a Post-Doctoral Fellow at the Hamilton Institute, National University of Ireland, Maynooth, from 2009 to 2011, and a Lecturer in the Faculty of Engineering and Physical Sciences, the University of Southampton, from 2011 to 2019. Since 2020, he has been a faculty member at the Department of Electrical and Computer Engineering, University of Alberta, where he is currently an Associate Professor. He is a Senior Member of IEEE, a Member of IET, and an invited reviewer of the Mathematical Review of the American Mathematical Society. He serves as an Associate Editor for several journals and conferences, e.g., IEEE Transactions on Automatic Control, and the IEEE Control Systems Society Conference Editorial Board.