

学术报告会

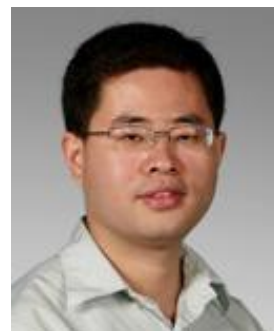
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Online Sensor Transmission Power Schedule for Remote State Estimation

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Abstract:

In this talk, we discuss on novel class of online sensor transmission power schedule for remote state estimation. A sensor sends its local state estimate to a remote estimator through an unreliable wireless channel, which introduces random data packet drops. The packet dropout rate is related to the transmission power which is allocated by the sensor under an energy constraint. The sensor chooses the transmission power based on the relative importance of the local estimate at each time. We show that the proposed power schedule preserves the Gaussian distribution of the local estimate innovation, which enable us to obtain a closed-form solution of the expected state estimation error covariance. Comparisons with different offline schedules are provided, which demonstrate significant performance improvement by the online schedule.

Biography:

Ling Shi received his B.S. degree in Electrical and Electronic Engineering from the Hong Kong University of Science and Technology in 2002 and Ph.D. degree in Control and Dynamical Systems from California Institute of Technology in 2008. He is currently an Assistant Professor at the Department of Electronic and Computer Engineering at the Hong Kong University of Science and Technology. His research interests include networked control systems, wireless sensor networks and distributed control.