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Kalman Filtering over an Unreliable Network: A Probabilistic Approach

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Venue: Room G6302, City University of Hong Kong

Reception starts at 4:15pm

(Language: **English**)

Abstract

We consider the problem of state estimation of a discrete time process over a packet-dropping or packet-delaying network. Previous pioneering work on Kalman filtering with intermittent observations is concerned with the asymptotic behavior of $E[P]$, i.e., the expected value of the error covariance, for a given packet arrival rate. We consider a different performance metric, $\Pr[P < M]$, i.e., the probability that P is bounded by a given M , and we derive lower and upper bounds on $\Pr[P < M]$.

About the Speaker

Ling Shi received the B.S. degree in Electrical and Electronic Engineering from the Hong Kong University of Science and Technology in 2002 and the Ph.D. degree in Control & Dynamical Systems from California Institute of Technology in Aug 2008. He is currently an assistant professor at the 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.