Vortragsankündigung

Seminar Regelungssysteme LV 0430L 654

Freitag, 24. November, 14.00 Uhr
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Robust model predictive control: tractable formulation and disturbance attenuation

Robust model predictive control requires solving on-line a constrained minimax problem, which is in general non-convex. In this talk, we relax the infinite horizon minimax problem using Lagrange duality. As shown, one can focus on the Lagrange (weak) dual problem instead of the primal one. For linear constrained systems, we formulate the problem to be on-line solved in the framework of LMI optimization, which is computationally tractable. We also discuss some issues of the resulting moving horizon closed-loop system, including feasibility, stability, dissipation, disturbance attenuation. Tractable formulations for uncertain/nonlinear constrained systems are also highlighted.

Biographical Information
Hong Chen is Professor of Communication Engineering at Jilin University, where she has been since 1999. She received her Ph.D. from Institut fuer Systemdynamik und Regelungstechnik at University of Stuttgart in 1997. In 2004, she was awarded the Program for “New Century Excellent Talents in University China”. She is a standing committee member of the Chinese Association of Process Control. Her research interests include model predictive control, optimal and robust control, moving horizon estimation and control of network and over network. Her applications are currently focusing on automotive control. She is author or co-author of more than 80 publications.