Guo, Lei (Chinese Academy of Science, China)

Some Progress on Discrete-Time Adaptive Nonlinear Control

Abstract: In this talk, I will present some recent progress on discrete-time adaptive nonlinear control. In contrast to the linear case, global stabilization of a typical class of parametric nonlinear systems may not be possible even if the least squares estimates are strongly consistent. It is found and proved that the adaptive stabilizability of such systems can be characterized by a polynomial criterion, which is determined by parameters that reflect the growth rates of the nonlinear functions in the system. Many problems are still open in this area.