Tamas Balogh

Title: Control-oriented MID: stabilization of conservative mechanical systems via delayed state feedback

Abstract. Stabilization of linear time-invariant dynamical systems via delayed state feedback might be possible by assigning a multiple real root of the corresponding closed-loop characteristic quasipolynomial. In this talk, we address sufficient conditions for the multiplicity-induced dominance (MID) of a real characteristic root if the parameters of the plant are fixed. These conditions can be investigated by exploiting the structure of the open-loop characteristic polynomial. The results will be demonstrated through specific examples of controlled mechanical systems.