

Minimax state estimation for linear differential algebraic equations

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This talk presents a generalization of the minimax state estimation approach for singular linear Differential-Algebraic Equations (DAE) with uncertain but bounded input and observation's noise. We apply generalized Kalman Duality principle to DAE in order to represent the minimax estimate as a solution of a dual control problem for adjoint DAE. The latter is then solved converting the adjoint DAE into ODE by means of a projection algorithm. Finally, we represent the minimax estimate in the form of a linear recursive filter.