

Talk: Positively invariant set estimation

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Abstract: We characterize the maximum positively invariant (MPI) set of a discrete-time polynomial dynamical system with semi-algebraic constraints as the solution of infinite-dimensional linear programming problems in duality. The primal problem is formulated on moments of occupation measures and the Perron-Frobenius operator. The dual problem is formulated on positive polynomials and the Koopman operator. We show that the Lasserre hierarchy generates a sequence of polynomial super level set outer approximations converging in volume to the MPI set. Joint work with Milan Korda and Colin Jones, see arXiv:1303.6469.