

A greedy subspace method for computing the H-infinity-norm

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Abstract. We consider the computation of the H-infinity-norm for transfer functions of a general class of linear and non-linear systems. We focus on the case where the state-space dimension is very large. We propose a subspace projection method to obtain approximations of the transfer function by interpolation techniques. The H-infinity-norms are computed for the resulting reduced functions, then the subspaces are refined by means of the optimal points on the imaginary axis where the maximum singular value of the reduced function is attained. In this way we obtain much better performance compared to existing methods.