



OPTIMAL HANKEL-NORM APPROXIMATION OF IIR BY FIR SYSTEMS (TueAmPO4)

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★ Abstract :

This paper presents a constructive method to (sub)optimal finite impulse response (FIR) approximation of a given infinite impulse response (IIR) model. The method minimizes the Hankel norm of approximation error by using the explicit solution of norm-preserve dilation problem. It has the advantage over the existing methods that it provides an explicitly constructive solution and allows the trade-off between the Chebyshev and least square criteria. The lower and upper bounds on the H_2 and Chebyshev norms of approximation error are given. The effectiveness and properties of the proposed algorithm are demonstrated through a computation example.