REDUCING NON-ZERO COEFFICIENTS IN FIR FILTER DESIGN USING POCS (WedAmOR7)

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Abstract :
The number of nonzero coefficients in an FIR filter determines the number of hardware multipliers that are required to implement the filter. Projection onto convex sets is shown to be an effective method to create linear phase FIR filters with reduced numbers of nonzero coefficients while maintaining filter specifications. The method can be used as an original design method or used to enhance the performance of filters generated by existing design methods.