FREQUENCY SAMPLING DESIGN OF ARBITRARY LENGTH FILTERS FOR FILTER BANKS AND DISCRETE SUBBAND MULTITONE TRANSCEIVERS (WedAmPO2)

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Abstract :

Recently, a new method for the design of Finite Impulse Response (FIR) prototype filters by frequency sampling for modulated filter banks was presented. In the previous work, we showed the algorithm for obtaining linear−phase prototype filters of restricted length: N=2mM, where m is an integer and M is related to the number of channels. Since fast algorithms of implementation for cosine−modulated filter banks have been proposed when the prototype filter length is N=(2p+1)M, we present the general expressions that allow us to obtain the arbitrary−length prototypes.

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*** Abstract : (cont.)**

These filters can be used for designing nearly perfect reconstruction modulated filter banks, as well as Transmultiplexers or Discrete Subband Multitone transceivers based on the above kind of filter banks.

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* Abstract : (cont.)	The analytical and simulation results show again that the designed system performance is extremely good.