

A NOVEL SPECTRUM TECHNIQUE FOR WIDEBAND SINGLE CARRIER TRANSMISSION

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ABSTRACT

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1. INTRODUCTION

2. NON-MAXIMALLY DECIMATED FILTER BANK ARCHITECTURE

In this section, we review the architecture of NMDFB, which is composed of a pair of filter banks and an intermediate processing unit in between the pair, as shown in Fig. 1. The filter bank on the left side in Fig. is call analysis filter bank (AFB) and the one on the right is called the synthesis filter bank (SFB). The composite response of AFB and SFB satisfies the perfect reconstruction (PR) property, i.e, the combined effect of AFB and SFB only introduces delay in the absence of the intermediate processing unit. Historically, PR filter banks have been proposed in several contexts, among which maximally decimated cosine modulated filter banks [8, 9] are the most popular choice in image coding communities. NMDFB is particularly useful for communications waveform signal processing due to several reasons. First, the aliasing management of NMDFB is simply [10, 11]. Second, the design of basic prototype filters is straightforward according to targeted system dynamic range. Third, NMDFB architecture supports runtime updates inside the processing unit, thus it is applicable to time-varying scenarios.

3. REFERENCES

REFERENCES

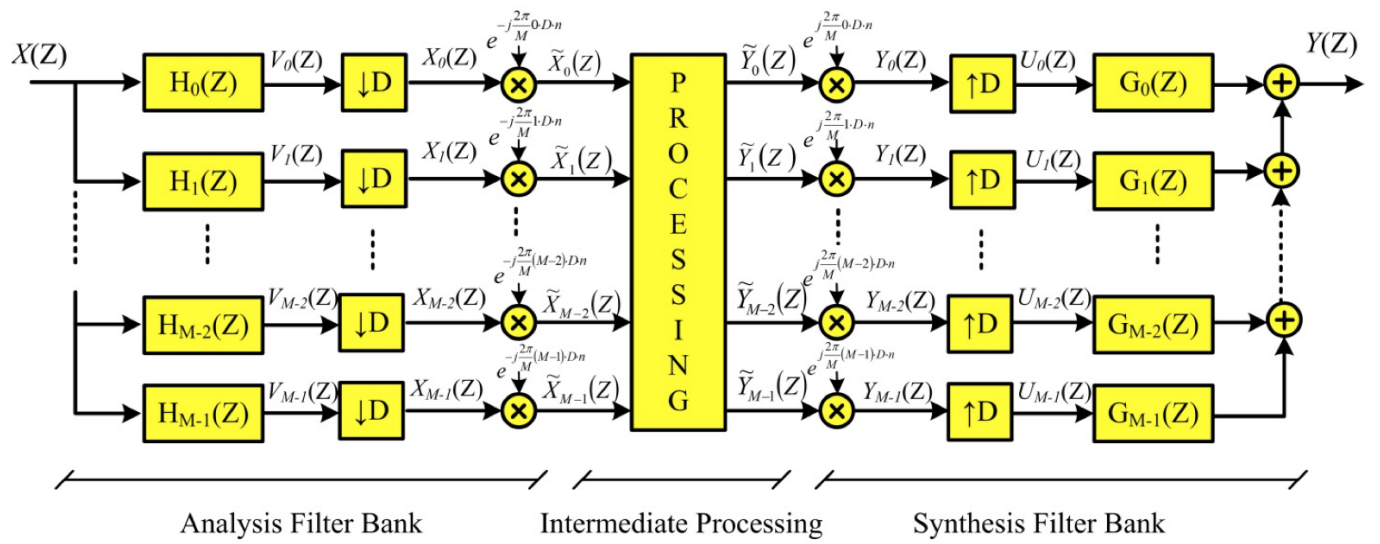


Figure 1: NMDFB architecture.