A CONSIDERATION ON THE BLIND CHANNEL ESTIMATION BASED ON IIR TYPE MODEL WITH BIAS COMPENSATION

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In this paper, we discuss a blind channel equalization (BCE) considered where the output data is corrupted by additive noise. As one of BCE methods, there is a method of permuting the parameter estimation problem of finite impulse response (FIR) channel model to that of infinite impulse response (IIR) system model. The feature of this method is the ability to use several existing adaptive algorithm. However, in the actual system, it is considered that the output data includes an additive noise. Under the influence of noise, asymptotic bias arises in the presumed value of frequency characteristics of channel. Then, we propose the modified BCE method using a recursive bias compensated least-squares (RBCLS) algorithm. The performances of the proposed algorithm are shown by computer simulation.

EVOLVING DISCRETE COEFFICIENT MODIFIED FILTER BANKS

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A hybrid Evolutionary algorithm using Evolutionary Programming (EP) and Genetic algorithms (GA), is proposed for the design of hardware efficient discrete coefficient modified filter banks. The proposed hybrid algorithm has improved convergence compared to the convergence provided by the two techniques individually. The filter coef-ficients are expressed as a sum of powers of two. Design examples are used to illustrate the effectiveness of the proposed algorithm

SIMPLE ROBUST PSK OR FSK DETECTION

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A very simple LMS-based adaptive notch filter implemented in FPGA's can be used to detect various PSK and FSK signals. While the performance of the detector in terms of BER and other factors is acceptable, the primary advantage of the demodulator is its simple hardware realization that does not require a reference signal.

HOW TO INTERPOLATE IN ARITHMETIC TRANSFORM ALGORITHMS

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In this paper, we propose a unified theory for arithmetic transform of a variety of discrete trigonometric transforms. The main contribution of this work is the elucidation of the interpolation process required in arithmetic transforms. We show that the interpolation method determines the transform to be computed. Several kernels were examined and asymptotic interpolation formulae were derived. Using the arithmetic transform theory, we also introduce a new algorithm for computing the discrete Hartley transform.