Abstract

Error Correction Codes are required to have a reliable communication within a channel having an unacceptable bit error rate and low SNR (signal to noise ratio). Channel coding for error detection and correction helps communication system designers in reduction of effects caused due to noise in the transmission channel. There exist two main forms of channel codes – block codes and convolution codes. Block code is further classified into linear and cyclic code. In this paper, we have analyzed the performance of hamming code (linear), BCH code (cyclic) and convolution codes based on different designs and compared them by using bit error rate performance of a receiver in an absolutely fair manner using BPSK (Binary Phase Shift Keying). All simulation was done using MATLAB R2011b Simulink software.
Comparative Performance Analysis of Block and Convolution Codes


Index Terms  
Computer Science  
Information Sciences

Keywords  
Error detecting and correcting codes; Hamming code; BCH encoder/decoder; convolution encoder/decoder.