Abstract

In the emerging field of medical image processing, computer vision, pattern recognition and other digital signal processing applications, window technique is vastly used. A window function is a mathematical function that is zero-valued outside of some chosen interval. When another function is multiplied by a window function, the product is also zero-valued outside the interval. In this paper, the performance of Hamming, Hanning and Blackman window have been mainly compared considering their magnitude response, phase response, equivalent noise bandwidth, sidelobe transition width, response in time and frequency domain using MATLAB simulation. To observe the responses, a FIR filter of low pass, high pass, band pass and band stop type have been designed and encountered them with each parameters stated above. The results that have been found is as same as its to be as stated in the theory. Comparing simulation results
Comparative Performance Analysis of Hamming, Hanning and Blackman Window

of different window, this paper has found Blackman window with best performance among them which is also expected from the theory. These windows have also been encountered with speech signal using MATLAB simulation and found the same expected result.

References

Comparative Performance Analysis of Hamming, Hanning and Blackman Window


Index Terms

Computer Science  Applied Sciences

Keywords

FIR filter  Impulse response  Magnitude response  Equivalent noise bandwidth.