

DEVELOPMENT OF SIMPLE FIXED LINEAR PREDICTORS FOR USE IN SPEECH COMPRESSION

Kio O.G.¹ and Emagbetere J.O.²

^{1,2}Department of Electrical/Electronic Engineering, University of Benin, Nigeria.

ABSTRACT

The need to compress digitised signals like speech for more efficient transmission and storage while still maintaining considerable amount of information that they convey is highly desirable. A very popular method used for compression is Linear Prediction Coding (LPC), by using the Linear Prediction Model. The development of simple fixed linear prediction filters for speech signal compression is therefore carried out in this work. The prediction filters- an analysis filter on one side and a reconstruction filter on the other are designed to have 11 fixed coefficients each. The Levinson-Durbin algorithm, derived from the Linear Prediction Model of speech is used to calculate the coefficients of the filter. Various speech signals are used to test the performance of both filters within a DPCM system. The output signals are then tested using objective and subjective quality tests. Results from these tests presented in later sections show satisfactory filter performance.

Email:zckog@yahoo.com¹,miracle5ng@yahoo.com²

Receive: 9th Septemebr. 2010.

Accepted: 16th Decemebr, 2010