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# AUDIO COMPRESSIOM USING WAVELETS IN MATLAB

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**ABSTACT:**

Speech compression is the technique of converting human speech into an efficiently encoded format that can later be decoded to produce a close approximation of the original signal. The merits of the compression technique are reduction in storage space, bandwidth, transmission power and energy. An efficient algorithm Discrete Wavelet Transform is employed for decomposition of original signal into wavelets coefficients at different scales and positions and these coefficients are truncated to perform encoding and decoding. The compression technique used in this project is better than other earlier coding techniques like μ- law coding, code excited linear predictive coding. Speech compression plays a prominent role in speech signal processing such as satellite communications, internet communications, transmission of biomedical signals and other applications. Wavelet is one of the recent developments to overcome the limitations of Fourier transform of signal analysis which has the special ability to examine signal simultaneously in both time and frequency.

**KEYWORDS: daubechies wavelet audio compression Discrete Wavelet Transform (DWT)**

**INTRODUCTION:**

Audio is common in all entertainment applications. If an audio file size is large, it takes more space to store. Audio/video compression frees up space substantially, which can then be utilised for other purposes. This article describes some important audio compression techniques. An audio signal sample is taken and analysed using MATLAB for frequency and amplitude. Haar and Daubenches algorithms are applied on the speech signal and the audio is compressed. Audio sizes before and after compression are compared. This article describes some important audio compression techniques. An audio signal sample is taken and analysed using MATLAB for frequency and amplitude. Haar and Daubenches algorithms are applied on the speech signal and the audio is compressed. Audio sizes before and after compression are compared.

**WORKING:**

Run Audio Compresssion.m file. You will get a window as shown in Fig. 1. Select the audio file and then press Compress Audio button. You will get output windows as shown in Fig. 5. Compare audio file sizes before and after compression. The compressed audio file is generated as Output1.wav in the same path as the original source file (AudioCompresssion.m).

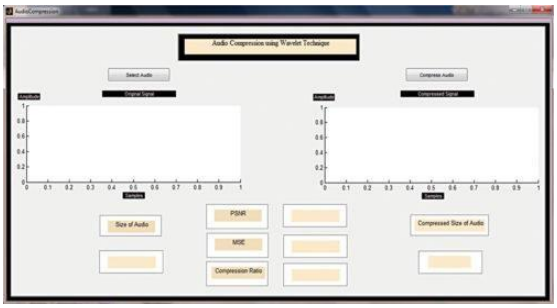


Fig.1:Program Output(Haar wavelet)

Now run AudioCompression2.m file. Select audio file and press Compress Audio button. You will get the program output window . Observe the size of compressed audio. Here, three compressed audio files are generated and saved in the same path as the original source file. These three outputs correspond to different discrete cosine transform (DCT) window sizes of 2, 4 and 8.

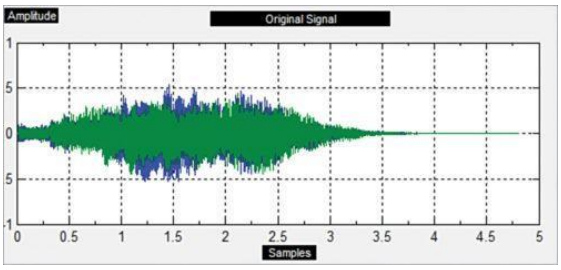


Fig.2:Original Audio signal(size :

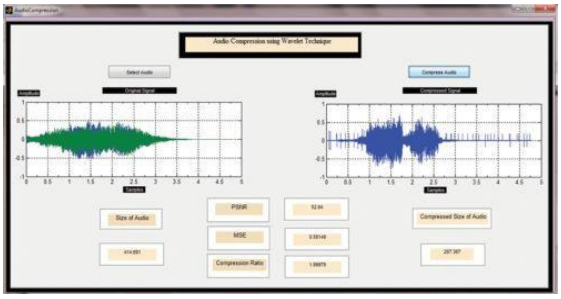

Fig.3:Graphicaluser interface for audio compression

Also, occasionally bypass the compressor while dialing in the settings. This method will help you hear how the compression is affecting the signal. And for more accurate results, avoid setting up the compressor in solo. It's best to listen to the track in context with everything else in your mix playing to make informed decisions.Last, it's better to apply small amounts of compression in stages using multiple compressors. Avoid having one compressor do all the heavy work

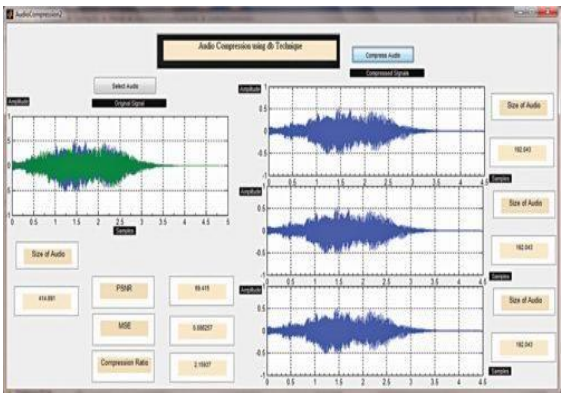

Fig.4:Program output(Daubenches wavelet)

**CONCLUSION:**

Audio compression is a useful techniquefor storing and transmitting audio files efficiently.

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**REFERENCES:**

1.https://matlabprojectcodes.blogspot.com/2019/03 /audio-compression-using-matlab-project.html
2.https://r.search.yahoo.com/_ylt=Awrx.vUJsxdki0 sIpfS7HAx.;_ylu=Y29sbwNzZzMEcG9zAzIEdnR pZAMEc2VjA3Ny/RV=2/RE=1679303561/RO=1 0/RU=https%3a%2f%2fwww.teckhme.com%2f202 3%2f03%2faudio-compression-using-wavelets in.html/RK=2/RS=kKIzxh_dPP5q AbiL7CvpxvUlb fE-
3.https://www.projectrhea.org/rhea/index.php/Audi o_Compression
4.https://r.search.yahoo.com/_ylt=Awr1RfCqtRdk Yw8Kdi27HAx.;_ylu=Y29sbwNzZzMEcG9zAzU EdnRpZAMEc2VjA3Ny/RV=2/RE=1679304235/ RO=10/RU=https%3a%2f%2fceur-ws.org%2fVol- 1755%2f104-107.pdf/RK=2/RS=kozpUDlZa5veBcWcU_lv3_Q1 Wv8-
5.https://r.search.yahoo.com/_ylt=Awrx.vV5uBdkg eAJMlO7HAx.;_ylu=Y29sbwNzZzMEcG9zAzUE dnRpZAMEc2VjA3Ny/RV=2/RE=1679304953/RO=10/RU=https%3a%2f%2fwww.electroschematic s.com%2faudio-compressor-agc%2f/RK=2/RS=8lvCVRzieSswLs.BGQ3dLptV DY4-
6.https://studentprojectguide.com/otherprojects/aud io-compression-using-wavelets-in-matlab/