Manual Page for ‘mymultiband1’ function

This manual page will explain how to use and adjust the ‘mymultiband1’ function in MATLAB.

• The first step in the process is to import the monophonic audio signal that is requiring compression. This can be achieved by locating the audio file in the ‘current folder’ directory and double-clicking so that the ‘import wizard’ dialogue box appears, from here you can change the name of the audio signal (not necessary), or just click finish (making sure both the audio file and the sample frequency box is checked) to import the data into the workspace.

Alternatively the audio can be imported with the following code making sure the correct filename (case sensitively) is inserted, as well as the sample frequency.

data = wavread ('filename', fs);

• The next step is to copy and paste the function into the command window (without copying the word ‘function’ and without pressing enter). It should look as followed:

outputsignal=mymultiband1(data,fs,x1,x2,x3,a1,a2,a3,a4,comp1,comp2,comp3,comp4)

From here the parameters can be inserted where:

data = the monophonic audio signal
fs = the sample frequency in ‘Hz’ e.g. 44100 Hz
x1 = the first crossover frequency in ‘Hz’ e.g. 150 Hz
x2 = the second crossover frequency in ‘Hz’ e.g. 3500 Hz
x3 = the third crossover frequency in ‘Hz’ e.g. 12000 Hz
a1 = tracking filter coefficient for the first band (attack) which is a number <1 where a smaller number will react to changes faster than a
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larger number e.g. 0.2 would be fast whereas 0.9 would be slow.

a2 = tracking coefficient for frequency band 2
a3 = tracking coefficient for frequency band 3
a4 = tracking coefficient for frequency band 4
comp1 = the amount of compression (gain) added to the signal in band 1.
The values must be between -.01 and -.5 where; -.5 will apply more
gain than the latter and may result in audible distortion.
comp2 = compression (gain) to frequency band 2
comp3 = compression (gain) to frequency band 3
comp4 = compression (gain) to frequency band 4

An example of the function with parameters inserted is as followed:

```plaintext
outputsignal= mymultiband1
(audio,fs,150,3000,5000,0.5,0.4,0.5,0.6,-.3,-.3,-.3,-.3);
```

Once parameters have been inserted, run the function by simply pressing
the enter key.
The function will then run and output the processed audio signal in the
‘workspace’ under the name ‘outputsignal’.
The output signal can be auditioned using:
sound (outputsignal, fs);

References

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