

Home Experiments (for possible extra credit)

To initiate these experiments you must install the virtual instrument programs. “Sound Auto Power” and “Fourier filter”. First load the file folders “Installer Sound Auto Power” and “Installer Sound Filter” to your computer.

To install each program run the program “setup.exe” and follow installation instructions. After successfully installing each program, you should now have two virtual instruments to input sound for analysis. You must have a microphone input installed on your computer to take in the sound data.

To test your programs it is suggested that you input your voice intoning the “ah” vocal sound. First open the “sound Auto Power” program “analysis”. In the “Sound Auto Power” program: First with your mouse rotate the high pass button to about 50 or 60 Hz. Now voice the sound continuously. Click on the “stop” button on the panel. Keep voice intoning until program stops and captures the wave form and spectrum. You can experiment with proper microphone input and sound quality until you can get and capture a proper trace for analysis. You can go the “file” menu and “print window” if you want to examine the wave form and spectrum.

The “Fourier Filter” program can record a short sound file for analysis.

First open the “Fourier Filter” program called “analysis”. With the mouse, rotate the “length of recording” dial to about 2.5 to 3.0 sec. Click on the record sound toggle to light the green light. Make sure the toggle button remains in on position. (up). Now start intoning the “ahh” sound while you click the “start recording” toggle switch. After a bit the four traces should show up on the graphs. Click each of the “Play” buttons to listen to the original sound recording. If you have not set either of the “high pass” or “low pass” filters they should sound the same. Next observe what happens when you move the high pass filter lever up. Listen to the filtered sound compared with the unfiltered sound. You can save the sound bite of the filtered sound to your computer as a wave file. This sound can be replayed in your media player.

To make new recordings you must first click the “discard” button after which the white start arrow appears at the top and you may record a new exercise.

If you can successfully repeat any of the above exercises, you may turn in a report for extra credit.