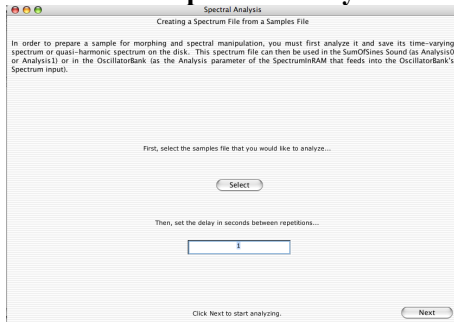


Composition: Electronic Media II

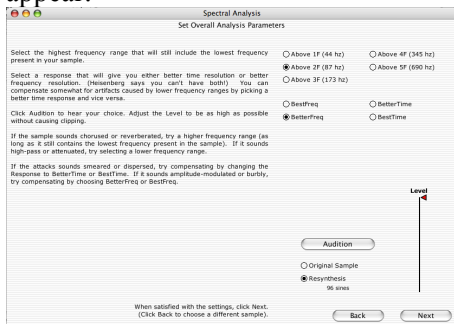
Spring 2009

Spectral Analysis in Kyma

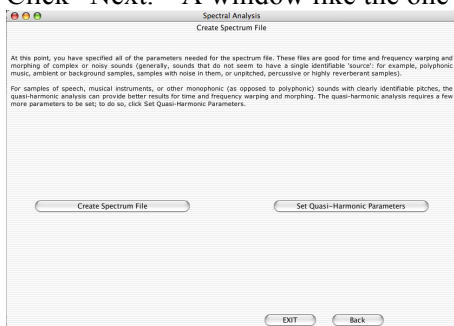
1. Prepare soundfiles for spectral analysis in **Kyma**
 - a. Use to **Peak** to isolate individual sounds—create a new mono soundfile for each sound and normalize it.
 - b. Single-pitches work better than complex sounds. A good resource is the Iowa Musical Instrument Samples Database.
2. Perform the spectral analysis of your soundfile as follows:
 - a. Launch **Kyma**.
 - b. Select **Tools>Spectral Analysis**. A window like the one below will appear:



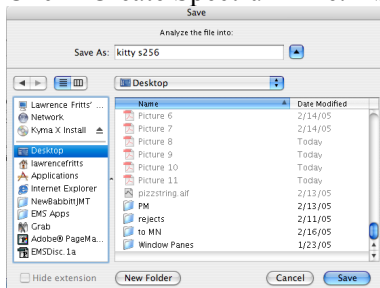
- c. Click “Select” to find a soundfile you wish to analyze, then click “next.” A window like the one below will appear:



- d. Click “Audition” to hear the spectral analysis. By ear, select the best settings in the upper right corner. Click “Next.” A window like the one below will appear:

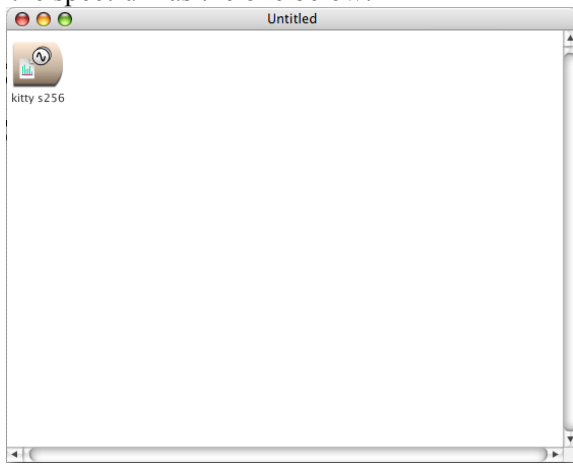


- e. Click “Create Spectrum File.” Select “Exit.” A save dialog like the one below will appear



- f. Note that s256 is appended to the file name. This denotes a spectral file with 256 tracks (which will be explained later). Click Save. A Sound File window like the one below will appear:

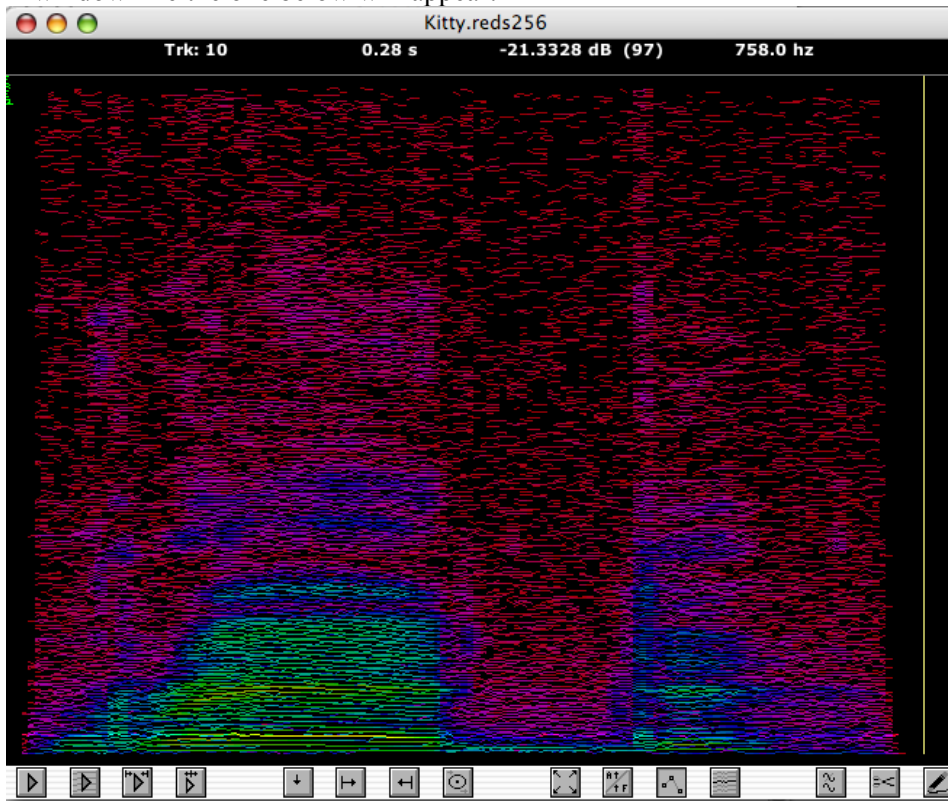
5. Save the spectrum as the one below:



Ignore this window for now and close it.

6. Open the **Spectrum Editor** as follows.

- a. Select **Open>Spectrum File**. Use the dialog window to find the spectrum file that you just created.
- b. A window like the one below will appear:



c. Note the following structure in the window:

- i. Frequencies are displayed as tracks. Note that track 10 has a frequency of 758 hz in this example.
- ii. Time is displayed left to right. Note that track 10 has a frequency of 758 hz at 0.28 seconds in this example.
- iii. Loudness (or amplitude) is displayed as colors, where green>blue>purple>red>black. Note that track 10 has an amplitude of -21.3328dB at 0.28 seconds in this example.
- iv. Play up to start marker.

- d. The **spectral editor**, has the following controls, indicated by the icons on the bottom of the window. From left to right:
- i. Play all tracks.
 - ii. Play selected tracks.
 - iii. Play between markers.
 - iv. Play up to start marker.
 - v. Place marker at scrub bar.
 - vi. Place start marker at scrub bar.
 - vii. Place end marker at scrub bar.
 - viii. Set pre- and post roll time.
 - ix. Zoom all the way out.
 - ix. Toggles between frequency and amplitude display modes.
 - x. Toggles between displaying tracks as dots or connected lines.
 - xi. Select tracks based on various criteria (complement, Fibonacci, prime, odd, etc.).
 - xii. Modify tracks in various ways (frequency, amplitude, arpeggiate).
 - xiii. Remove contents of the file between start and end markers.
 - xiv. Toggle between displaying and drawing tracks.

7. To edit the spectral file, perform some track selection techniques discussed in class. Click save. A save dialog will prompt you to name the "FileNames256 subset". Be careful. If you create another file, it will also be named "FileNames256 subset". A solution is to adopt a naming scheme of subset1, subset2, etc.