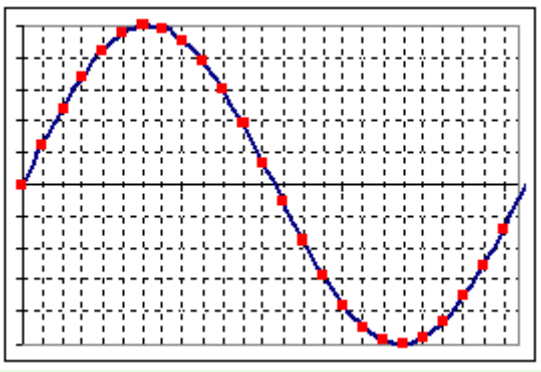
Sound Capture

Recording, visualization and recognition of sound

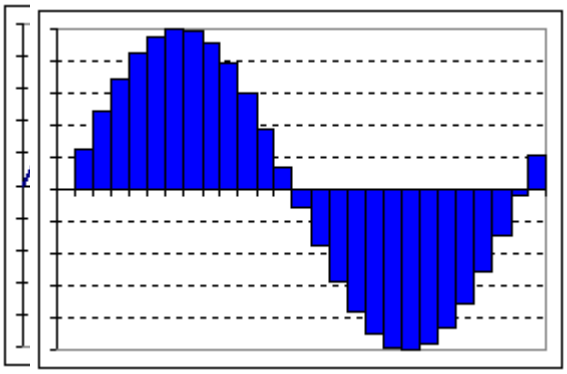
The whole idea of this project was to make the link between biology and physics. As a biologist you want to make a study of a biotope but mostly you don't register the sound of birds and animals. When you record that with an mp3 player then you can recognise some birds or the sound of other animals by visualizing it with an oscilloscope. But that is not so easy for students in secondary school to use.
Therefore the idea of doing that with some freeware programs in an investigation lab. Those who can use a computer in the class with some freeware which is on the cd and a headset can have the same results and even more…

- Computer or laptop with a good soundcard
- Headset or microphone
- Stemvorken (bv. 440 Hz, 1700 Hz) en hamertje
- sound recordings (on the cd, or eventually making it yourself)
- Software:
    - BIP Electronics Lab Oscilloscope - 3.0
    - Audacity
    - Visual Analyser 8.10

If you are doing experiments in which you want to record a signal (voltage) for a long time you can use an oscilloscope. If you don't have this apparatus at your disposal then you can use a computer with a sound card. The computer must link the AD/DA-conversion (Analogue to Digital and vice versa). Analogue signals (sound) come in via the microphone entrance or the line-in. These signals are digitalised by the soundcard (= sampling). Most of the sound cards can sample without problems with a frequency of 44.1 kHz.



Sampling

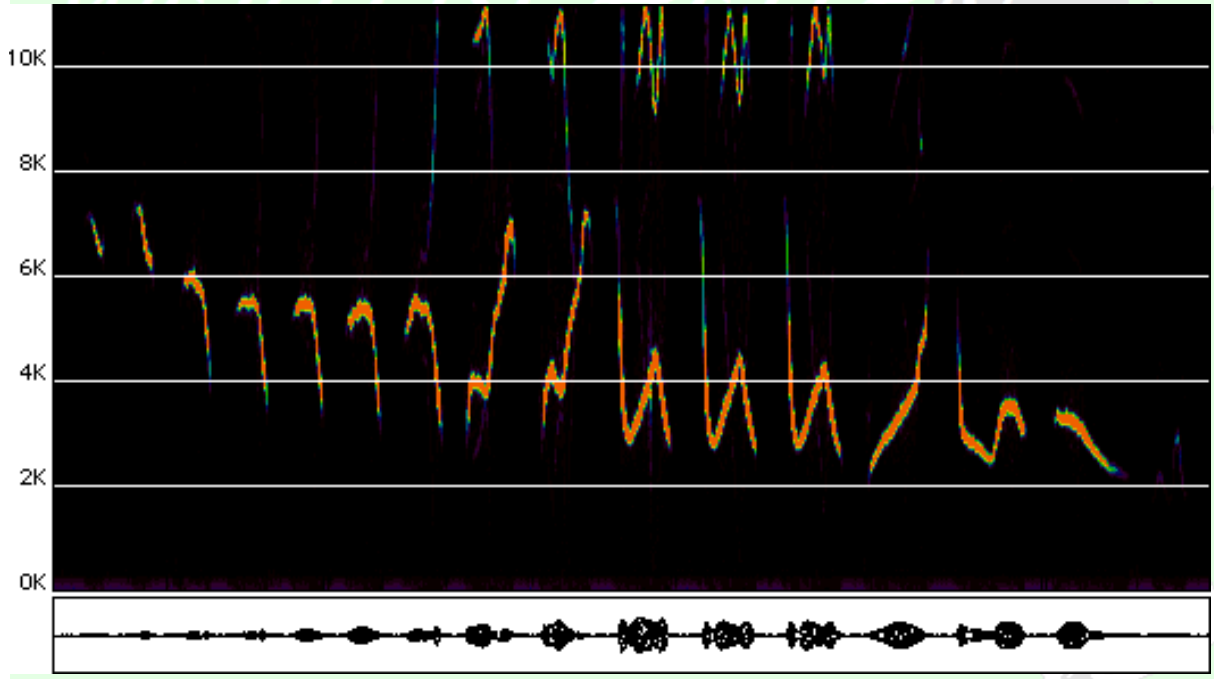


Digital signal

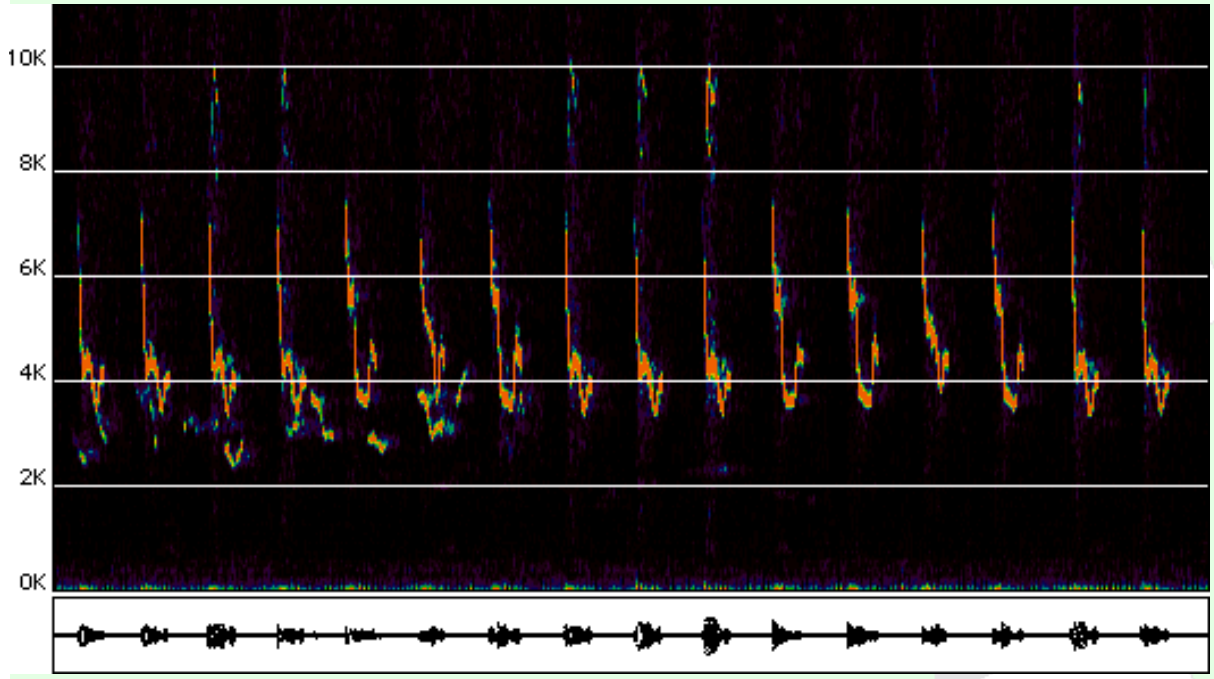
'Natural sounds'
On the cd you find all the freeware and some recordings of the fitis and the tjiftjaf. These two birds are very much alike but have a different song.

The sonograms from fitis and tjiftjaf.

Fitis (Phylloscopus trochilus):



Tjiftjaf (Phylloscopus collybita):



More information at the workshop or mail to marc.debusschere@skynet.be