

# Automatic data processing with Praat

Deadline: 30.01.2008

## 7 Exercise

Write a script that draw the **Intensity** contour of a selected **Sound** into the Picture Window viewport. Observe the following points:

- a. The horizontal and vertical axes should correspond to the time scale and intensity range of the **Intensity** object, respectively.
- b. The background should be **Black**, and the contour should be **Lime** where the intensity is within the bottom half of its range, **Yellow** where it is in the third quartile (50%-75%), and **Red** above 75%.
- c. Compose the picture in four layers, (1) the background, (2) the full intensity contour, (3) the contour only where it is **Yellow**, and (4) the contour only where it is **Red**.
- d. Adapt the approach described for **Formant** objects in <http://uk.groups.yahoo.com/group/praat-users/message/3498> to draw only portions of the intensity contour into the corresponding viewport sections.
- e. Create a **TextGrid** with two interval tiers, named “yellow” and “red”. Those intervals where the contour should be drawn in the color after which the tier is named should be labeled in a certain way (**yellow** and **red**, for instance).

Test the script by manually adding intervals in this **TextGrid**, then converting the tiers to **TableOfReal** objects and drawing the **Yellow** and **Red** portions of the intensity contour on top of the **Lime** contour (as per the previous point).

- f. Automatically create a **TextGrid** that contains boundaries at those points where the intensity crosses the 50% and 75% thresholds, on the respective tiers. Use this **TextGrid** instead of the one from the previous point.

An easy way to get this kind of **TextGrid** from an **Intensity** Object is to (ab)use the command **To TextGrid (silences)**... with appropriate parameters. Note that we are dealing with logarithmic values, so we actually have to *subtract* 25dB to get e.g. the top quartile:

```

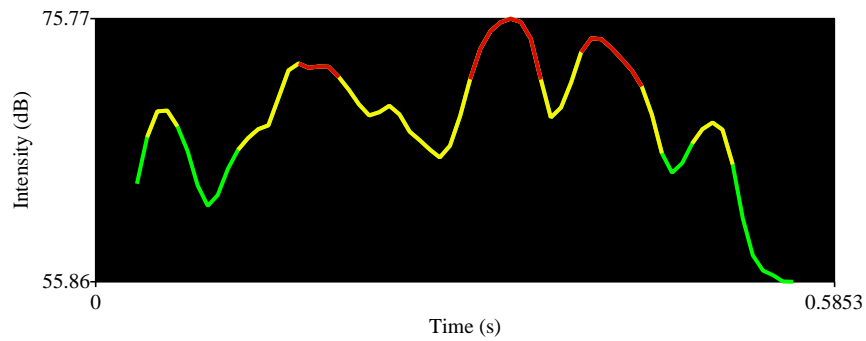
# get dynamic range
intensity = selected("Intensity")
min = Get minimum... 0 0 Parabolic
max = Get maximum... 0 0 Parabolic
range = max - min

# get 50% threshold
thres50 = -range * 0.5
tg50 = To TextGrid (silences)... thres50 0.01 0.01 "" yellow
Rename... Yellow

# get 75% threshold
select intensity
thres75 = -range * 0.25
tg75 = To TextGrid (silences)... thres75 0.01 0.01 "" red
Rename... Red

```

The result should look similar to this:



Extra. Instead of drawing the `Yellow` and `Red` contour sections on top, you could instead draw each section only once, in the appropriate color. Revise the script so that this method is used instead of layers.