

## HQSYN16 - Task #4211

Task # 3677 (New): RA3b - Phonetically justified parameters (spectral tilt, ...)

Task # 3970 (Closed): Formant-based join cost computation

### Praat script to compute spectral slopes

02.06.2017 09:29 - Tihelka Dan

<b>Status:</b>	Closed	<b>Start date:</b>	02.06.2017
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Hanzlíček Zdeněk	<b>% Done:</b>	0%
<b>Category:</b>		<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	RA3: Phonetically justified parameters for speech synthesis		

#### Description

This has been suggested in [#4176](#):

We can try experimenting with some spectral slope measures. These typically compare energy in specific spectral bands. I would try the measure which Honza Volín introduced, which calculates the ratio of a low and high frequency band energy. The low band is defined as 350-1100 Hz (so it excludes the band corresponding to F0), the high band includes the 2300-5500 Hz frequency range (excluding the F2 range, which is important to convey phonemic differences).

Thus, we need spectral slope values computed somehow. Radek S. suggested that "*In Praat, you can use the command Get band energy difference... 350 1100 2300 5500.*"

Could you, please, have a look at such slopes computation? For *spkr\_AJ* now (and store them to `data/non-mastered/zkracene-pauzy/param/spectral-slopes/`). For more details about slopes computation contact Radek or Tomáš, or see [#971](#) where some description of spectral slopes is given.

#### History

##### #1 - 07.06.2017 12:30 - Hanzlíček Zdeněk

- Status changed from New to Assigned

##### #2 - 08.06.2017 09:59 - Tihelka Dan

- Description updated

##### #3 - 09.06.2017 16:03 - Hanzlíček Zdeněk

- File `get_slope.py` added

- Assignee changed from Hanzlíček Zdeněk to Tihelka Dan

I gave up programming in PRAAT, since all my efforts were in vain. Therefore I wrote a simple script in Python (utilizing [SPTK toolkit](#)). Computed values are stored in ASF format in the requested directory.

##### #4 - 22.08.2017 14:33 - Tihelka Dan

- Status changed from Assigned to Resolved

- Assignee changed from Tihelka Dan to Hanzlíček Zdeněk

Just few notes to ASF format:

- there is no space allowed in the comment block. Correct must be:

```
#!ASF!#
#
# band_1_avg, band_2_avg ... average amplitudes inside frequency bands
# width ... distance between centra of band 1 and band2 [Hz]
# slope = ( band_2_avg - band_1_avg ) / width.
```

- there must be a space after/before special comment tag:

```
< band_1_begin = 350 >
```

I recommend to use `asf.ASF` class to build and store the ASF format, instead of hand-crafted writer. I have fixed the issues by myself, so just keep them in mind. You can close the task now ...

**#5 - 16.09.2017 22:24 - Hanzlíček Zdeněk**

- *Status changed from Resolved to Closed*

## Files

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get_slope.py	5.31 KB	09.06.2017	Hanzlíček Zdeněk
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