

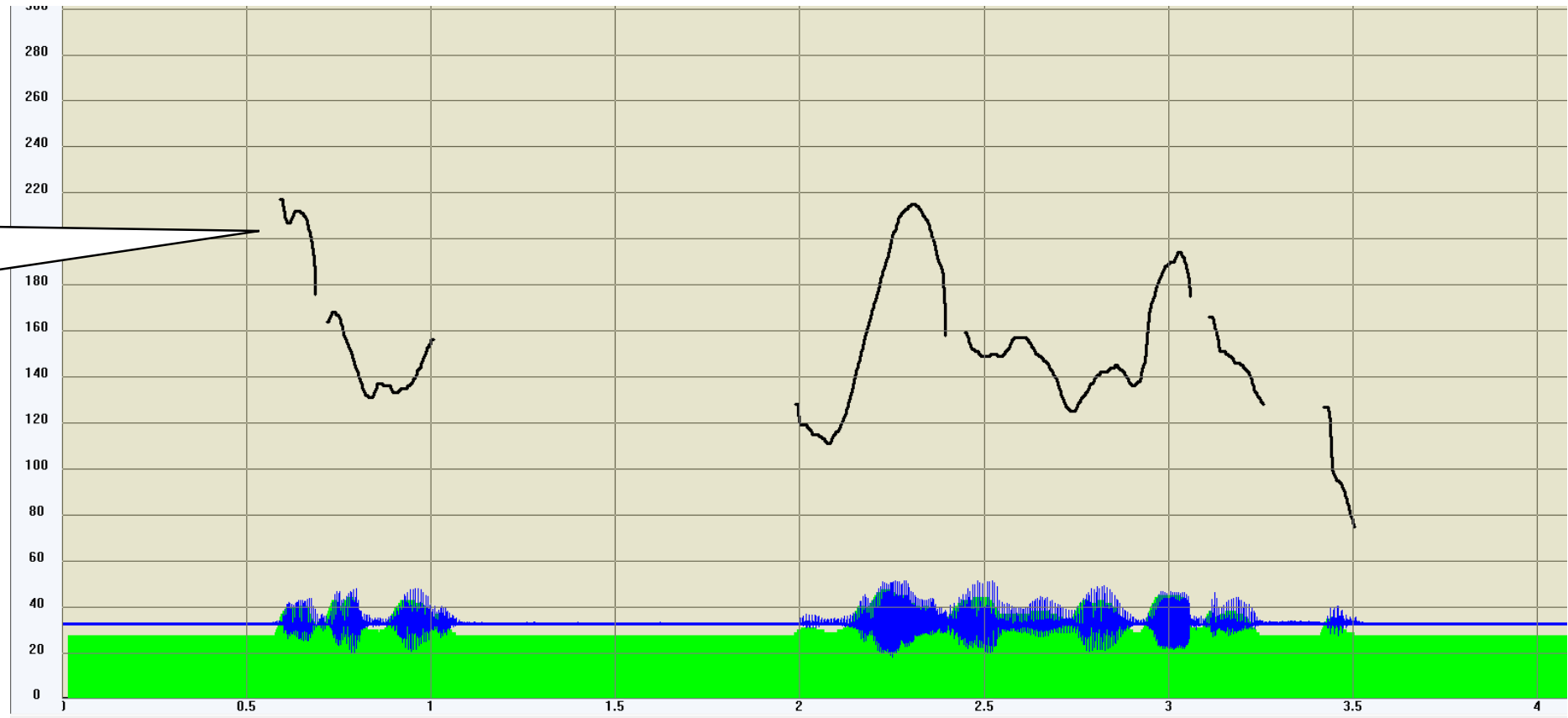
Pitch Instruments Inc.

# Prosodic morphing with WinPitchW10

Philippe Martin

# Object: modify prosodic parameters with PSOLA synthesis

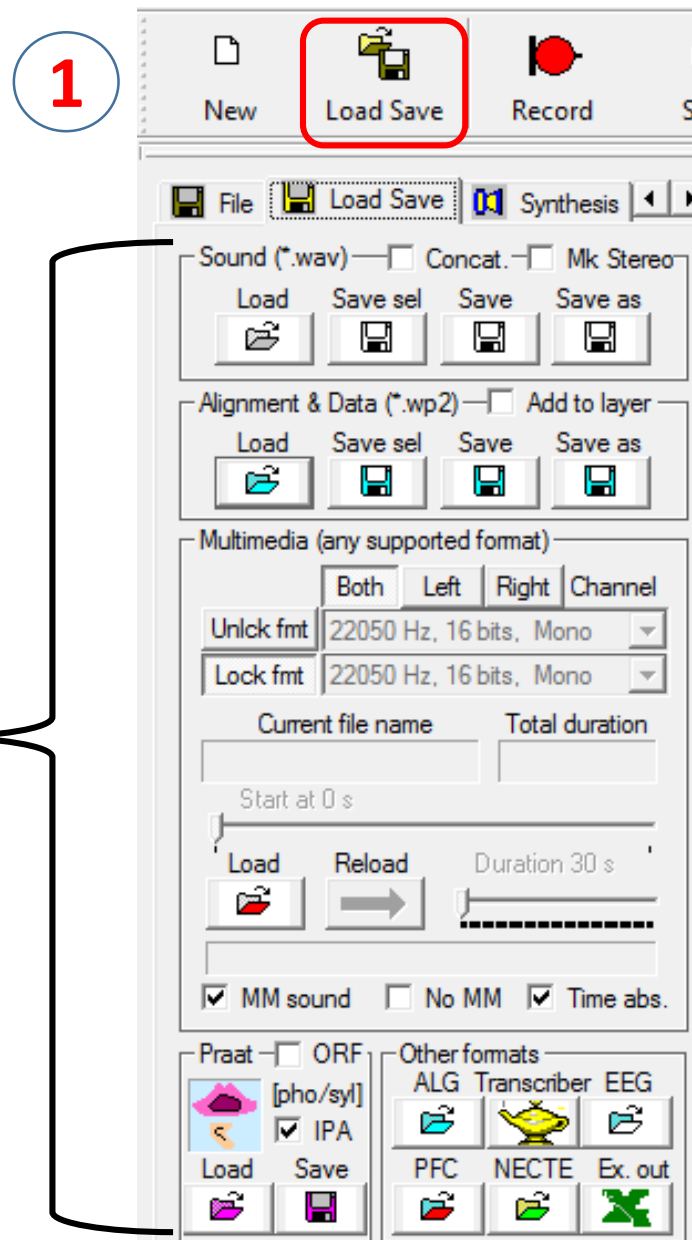
Fundamental frequency  
(aka melodic) curve on  
the analysis window



## Sequence of operations

### 1. Load the original sentence

Load speech  
file functions



Available formats:

wav

wp2

Multimedia (mp3, mp4, aiff, flv, snd, etc.)

TextGrid (Praat)

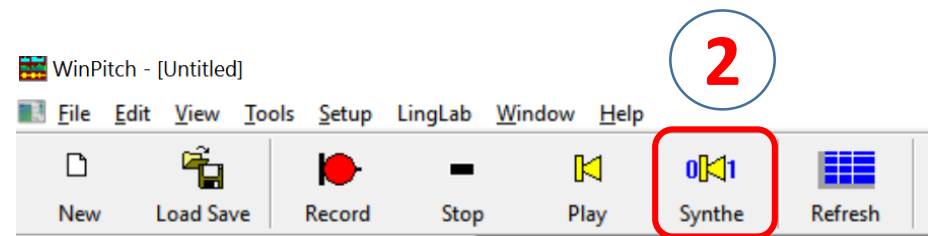
ALG

trs (Transcriber)

Necte

# Sequence of operations

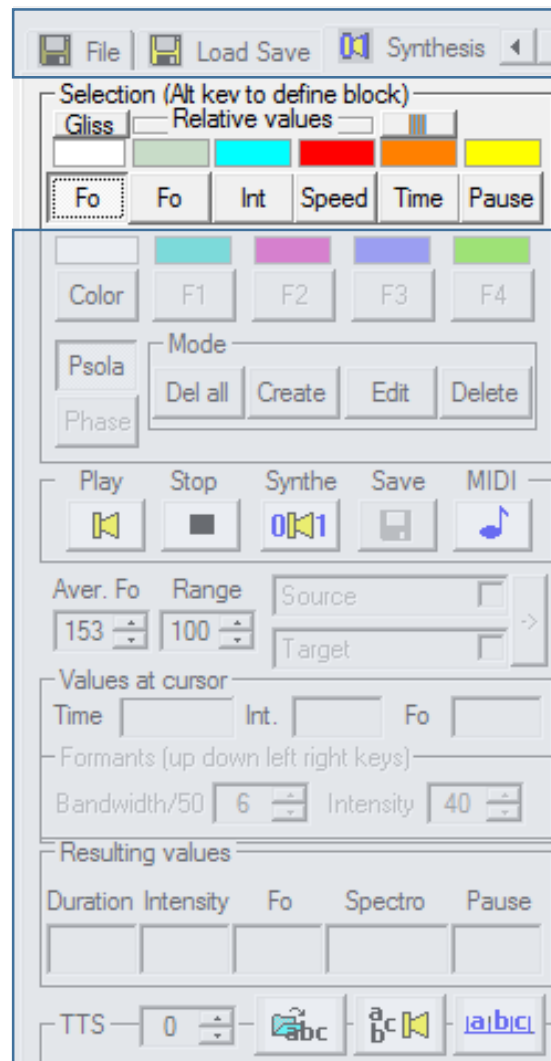
## 2. Select the synthesis command block



Synthesis functions

A detailed view of the WinPitch 'Synthesis' panel. The panel is divided into several sections. At the top, there's a 'Selection (Alt key to define block)' section with a 'Gliss' checkbox and a row of colored buttons (green, cyan, red, orange, yellow). Below this is a row of buttons labeled 'Fo', 'Fo', 'Int', 'Speed', 'Time', and 'Pause'. The next row contains 'Color', 'F1', 'F2', 'F3', and 'F4'. A 'Mode' section includes 'Psola' and 'Phase' checkboxes, and buttons for 'Del all', 'Create', 'Edit', and 'Delete'. A row of buttons for 'Play', 'Stop', 'Synthe', 'Save', and 'MIDI' is present, with the 'Synthe' button highlighted. Below this are input fields for 'Aver. Fo' (153) and 'Range' (100), along with 'Source' and 'Target' dropdowns. A 'Values at cursor' section has input fields for 'Time', 'Int.', and 'Fo'. A 'Formants' section has a label '(up down left right keys)' and input fields for 'Bandwidth/50' (6) and 'Intensity' (40). A 'Resulting values' section has buttons for 'Duration', 'Intensity', 'Fo', 'Spectro', and 'Pause'. At the bottom, there's a 'TTS' section with a '0' input field and buttons for 'abc', 'Bc', and 'a|b|c|'. The bottom of the panel features a table with columns 'T...', 'Start', 'End', 'V1', and 'V2'. Callout boxes on the right point to specific areas: 'Parameter selection' points to the 'Fo', 'Int', 'Speed', 'Time', and 'Pause' buttons; 'Track mode selection' points to the 'Del all', 'Create', 'Edit', and 'Delete' buttons; 'Function selection' points to the 'Synthe' button. A large bracket on the left side of the panel is labeled 'Synthesis functions'.

3



### 3. Select the prosodic parameter

Fo absolute fundamental frequency

Fo relative fundamental frequency

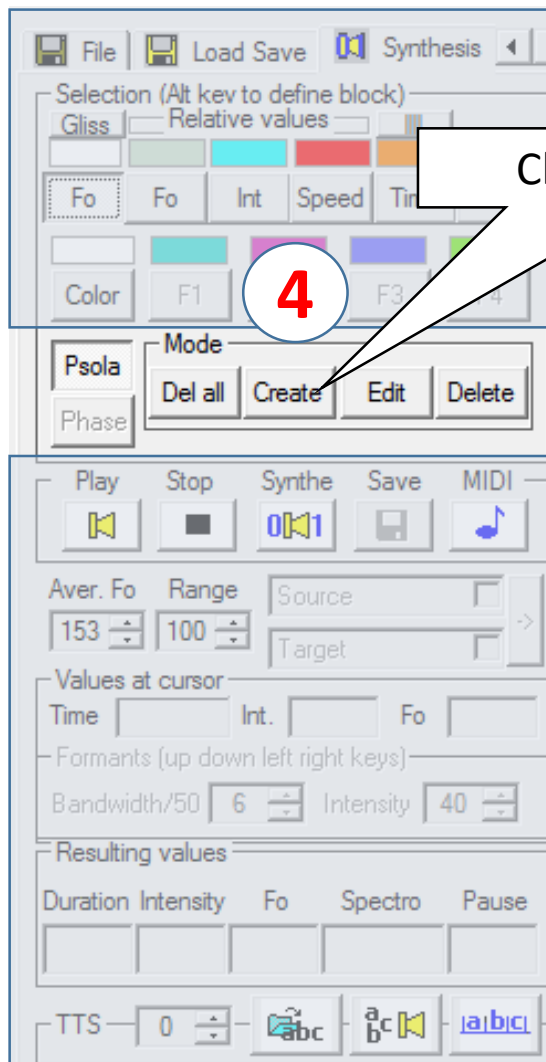
Int Relative Intensity

Speed Playback relative speed

Time Absolute duration

Pause Pause insertion

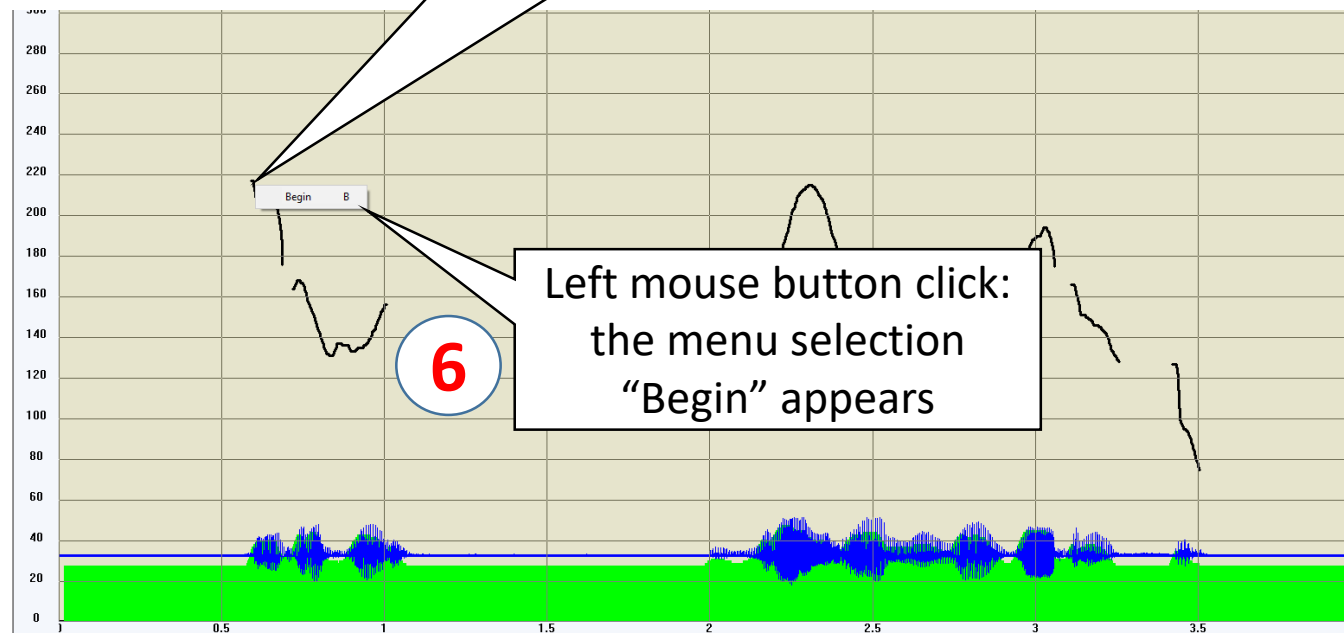
## Position the prosodic track starting point



Click on "Create"

5

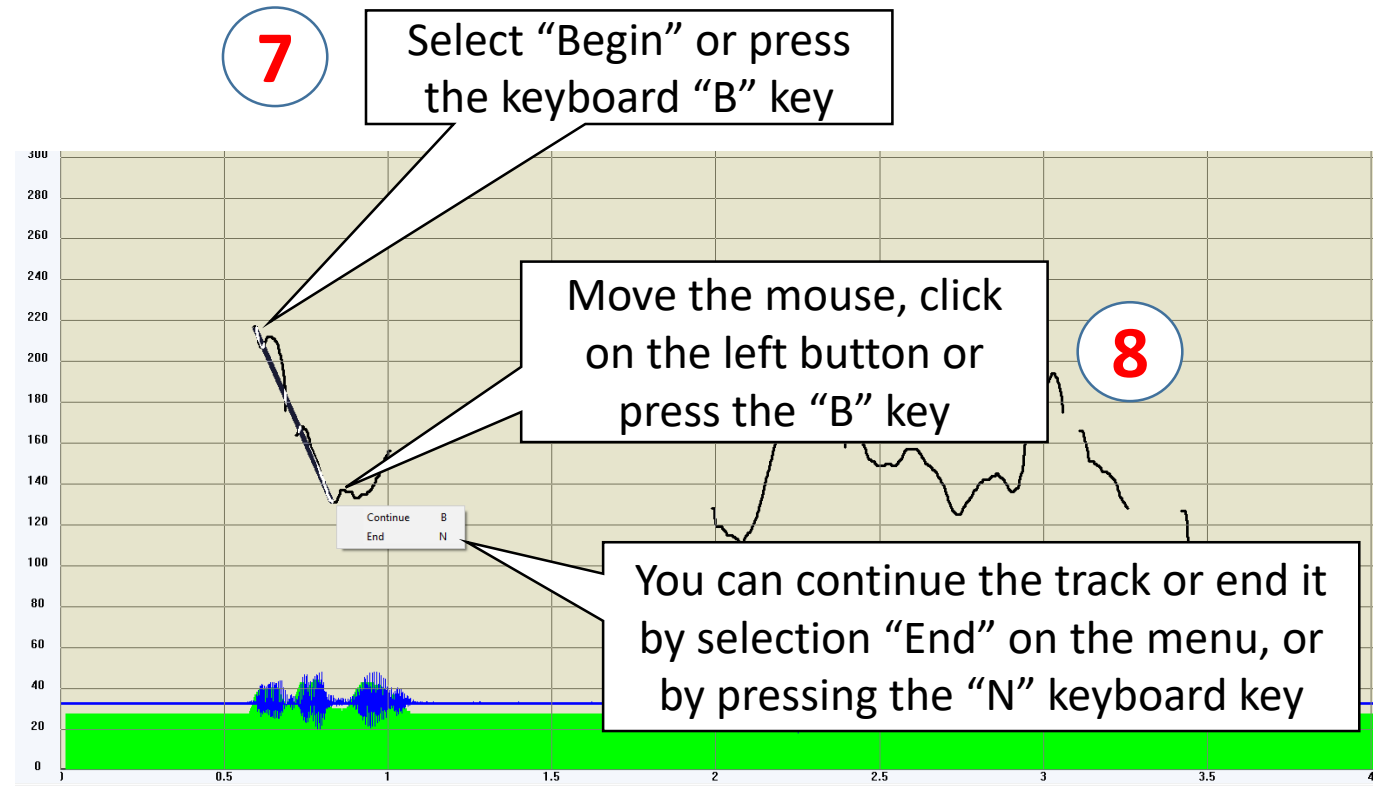
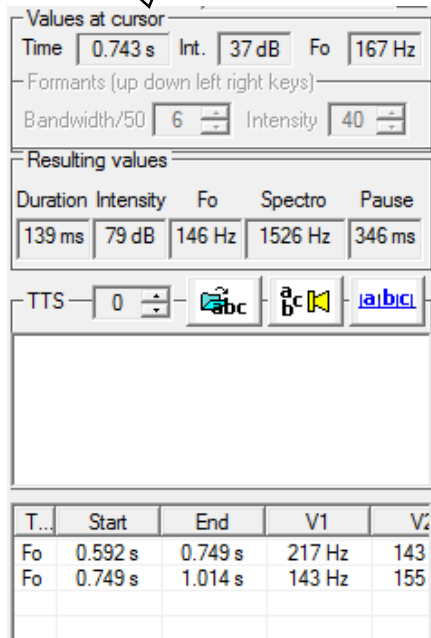
Position the cursor on the track starting point



Left mouse button click:  
the menu selection  
"Begin" appears

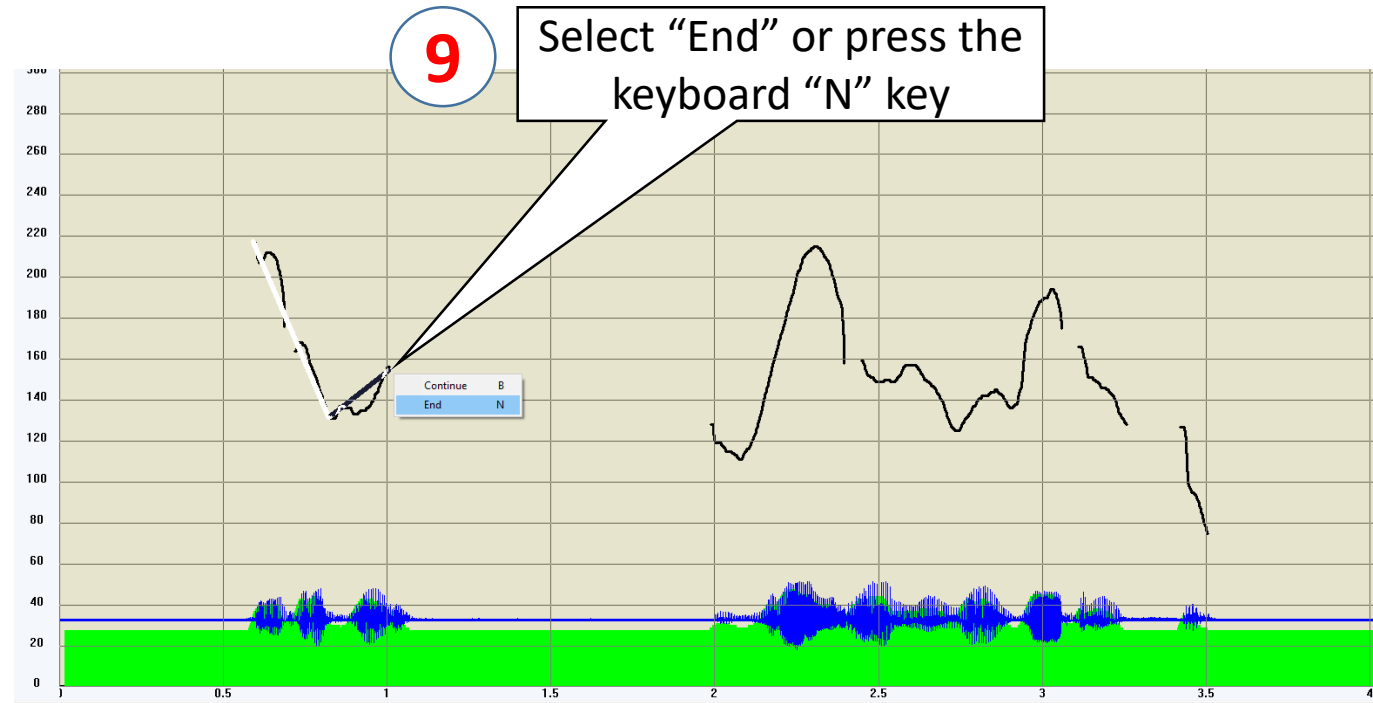
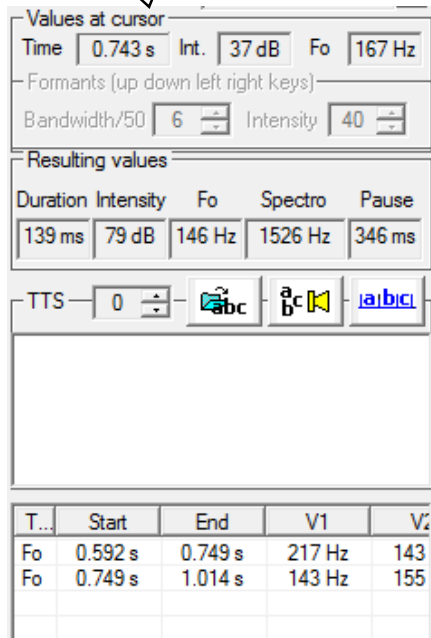
## Continue the prosodic track

Coordinates of tracks are displayed in real-time



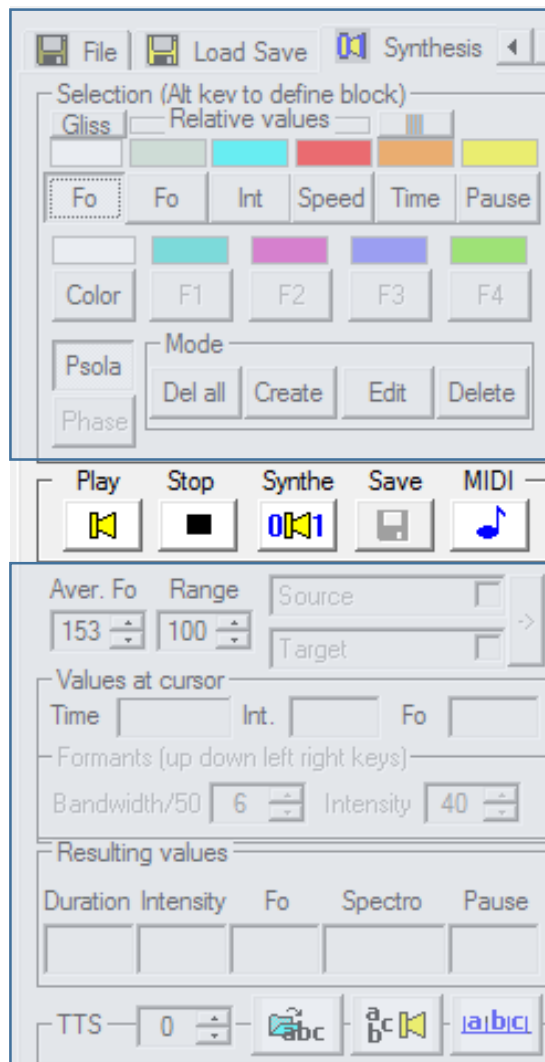
## Ending the prosodic track

Coordinates of tracks are displayed in real-time





10



## 10. Playback of the prosodically morphed speech

Play Playback the original speech

Stop Stop playback

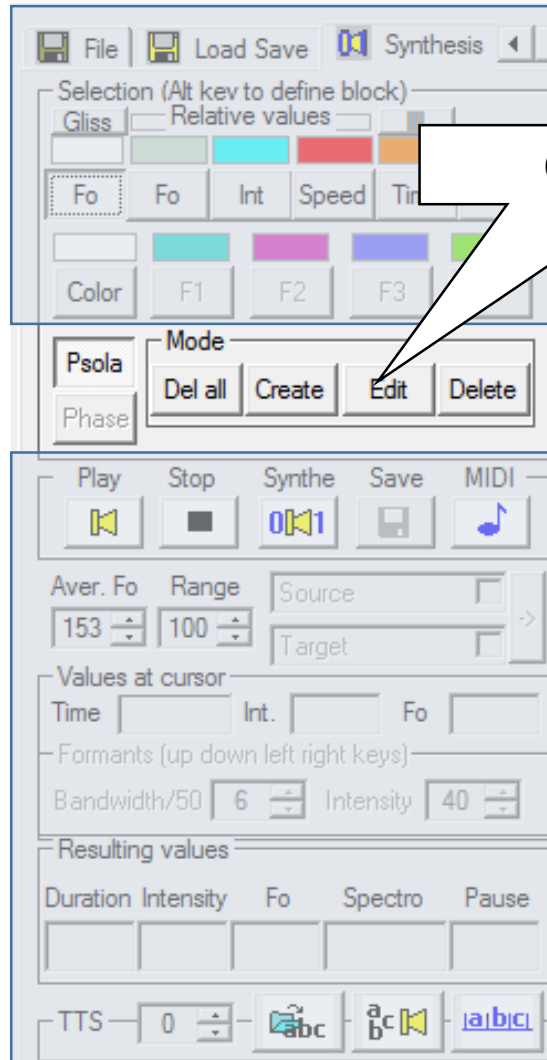
Synthe Playback the synthesized speech

Save Save the synthesized speech

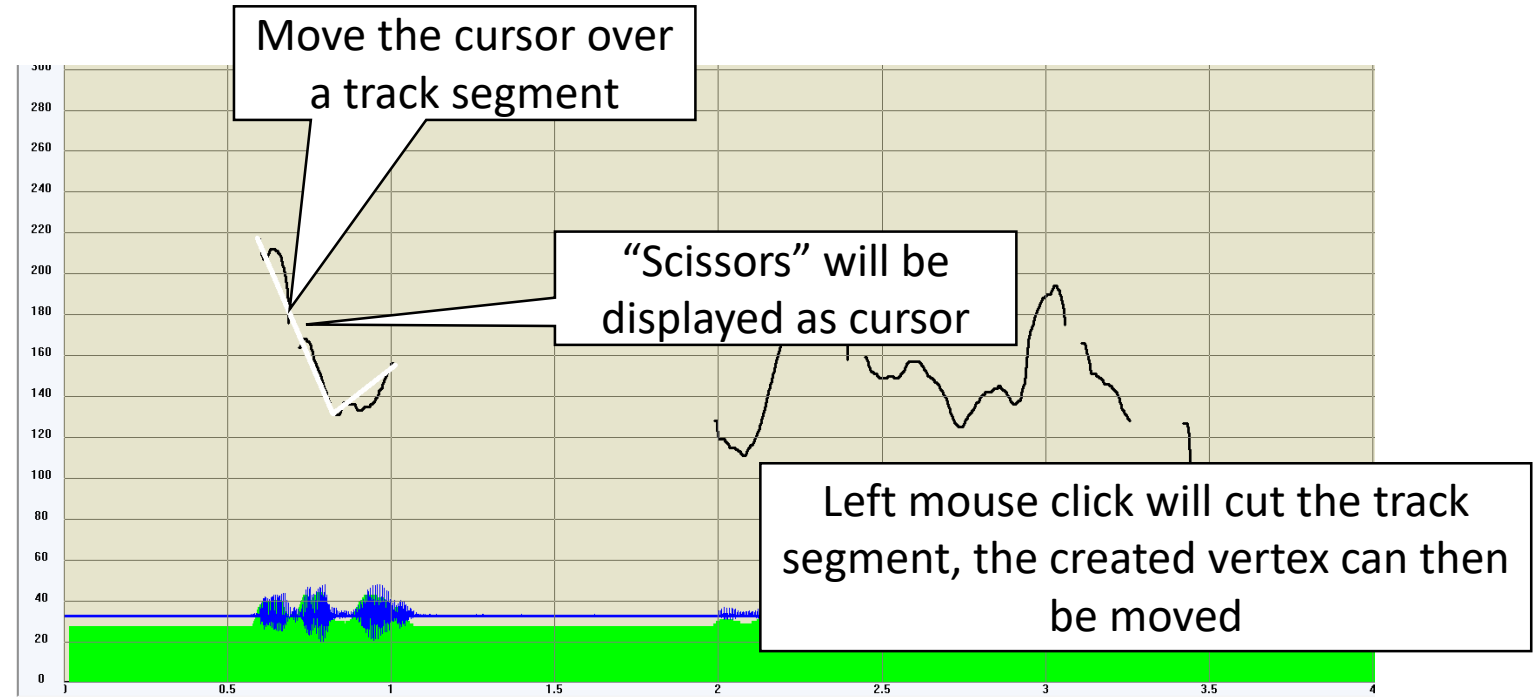
MIDI Goto to MIDI functions

# 11

## Modifying the prosodic track



Click on "Edit"



Move the cursor over a track segment

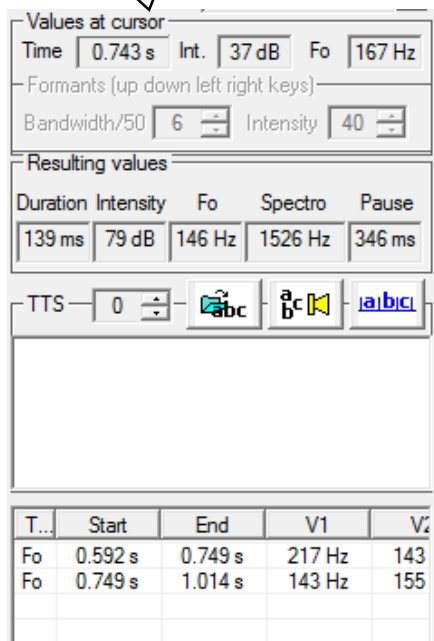
"Scissors" will be displayed as cursor

Left mouse click will cut the track segment, the created vertex can then be moved

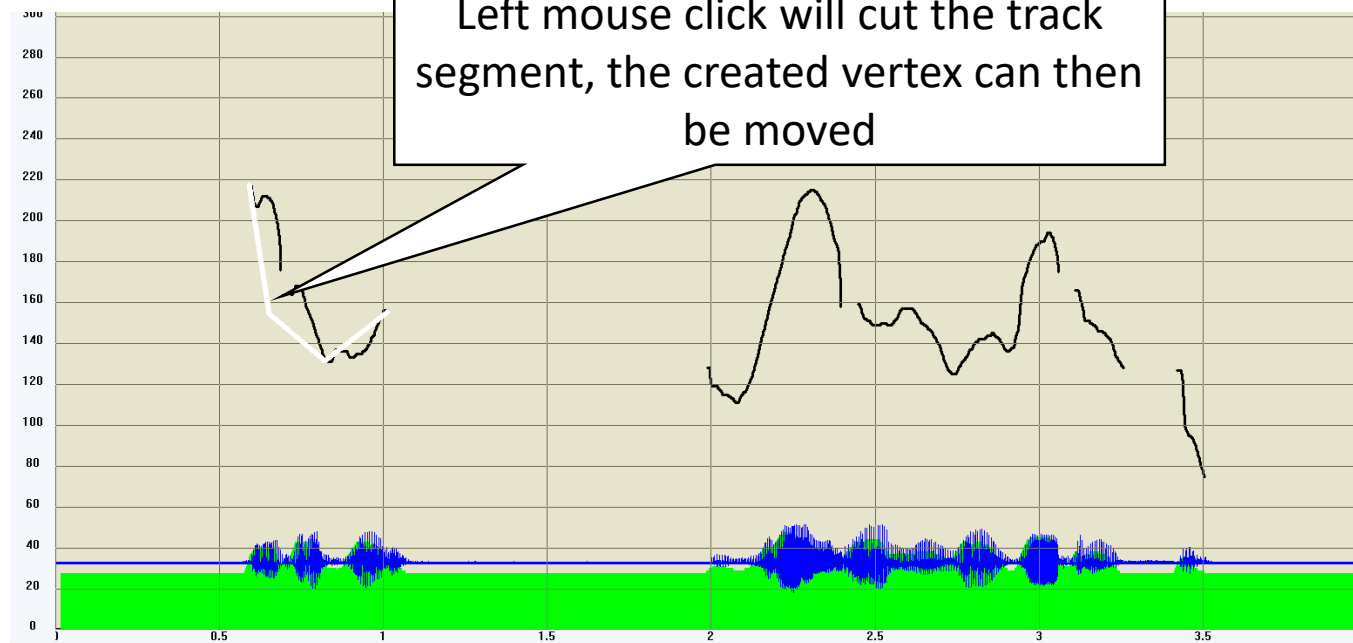
# 12

## Modifying the prosodic track

Coordinates of tracks are displayed in real-time



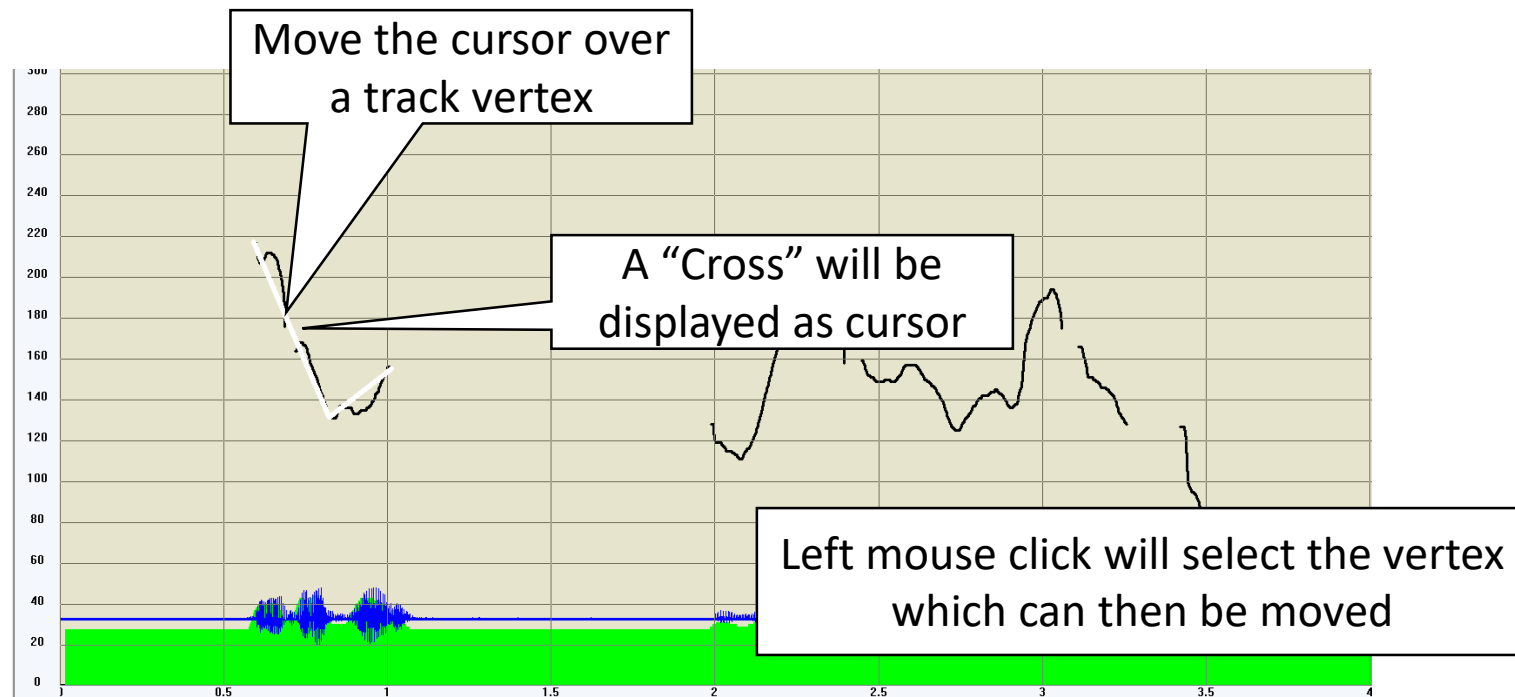
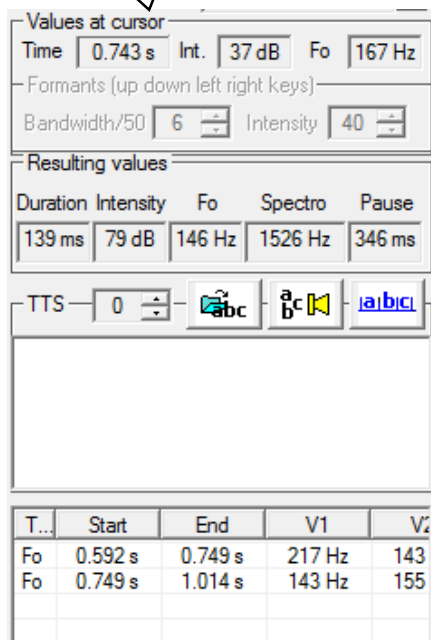
Left mouse click will cut the track segment, the created vertex can then be moved



# 13

## Modifying the prosodic track

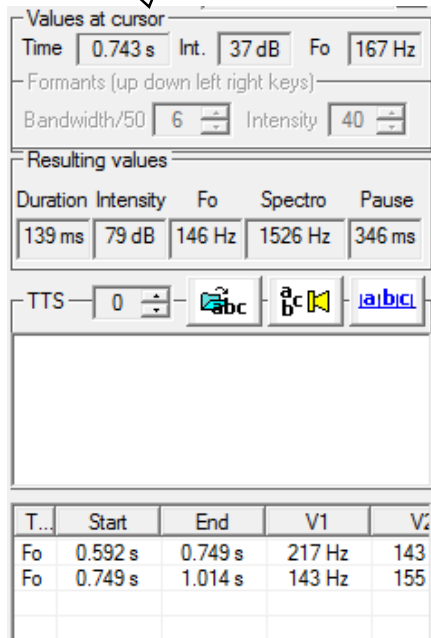
Coordinates of tracks are displayed in real-time



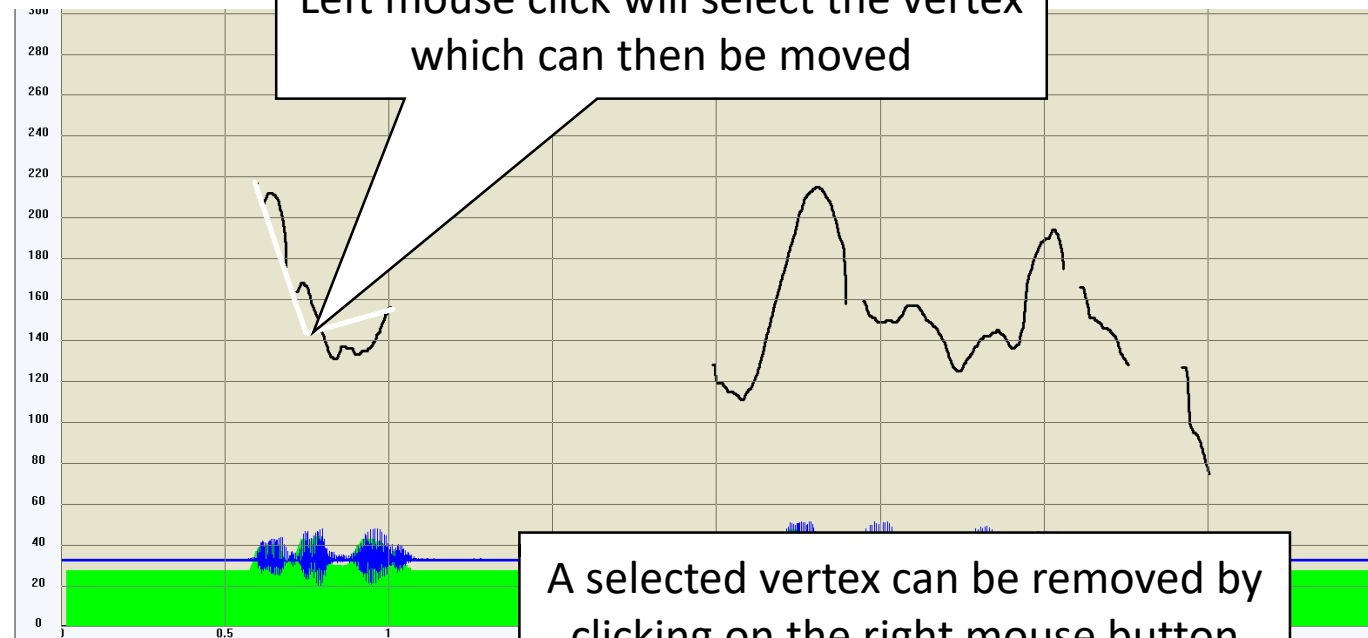
# 14

## Modifying the prosodic track

Coordinates of tracks are displayed in real-time



Left mouse click will select the vertex which can then be moved

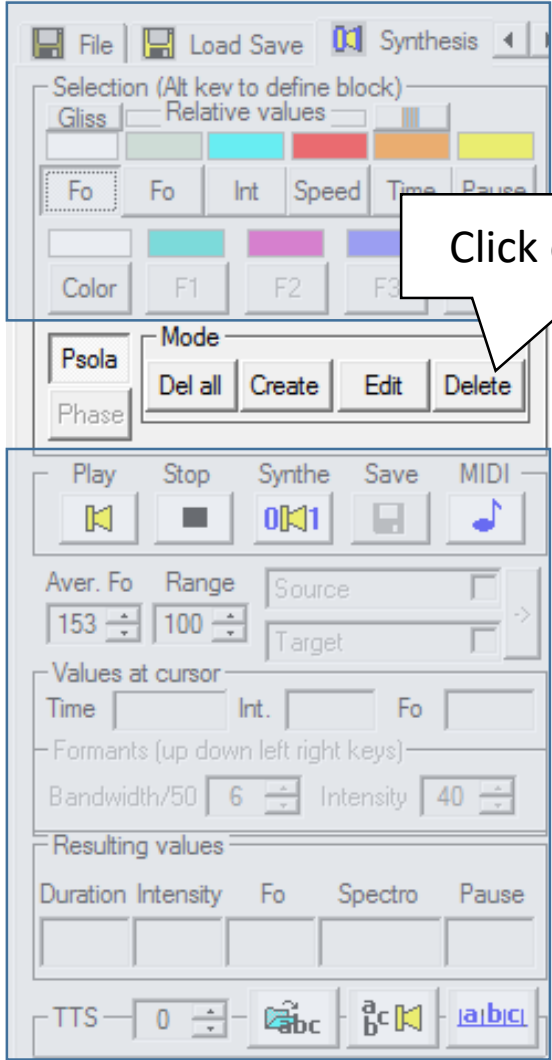


A selected vertex can be removed by clicking on the right mouse button

# Deleting the prosodic track

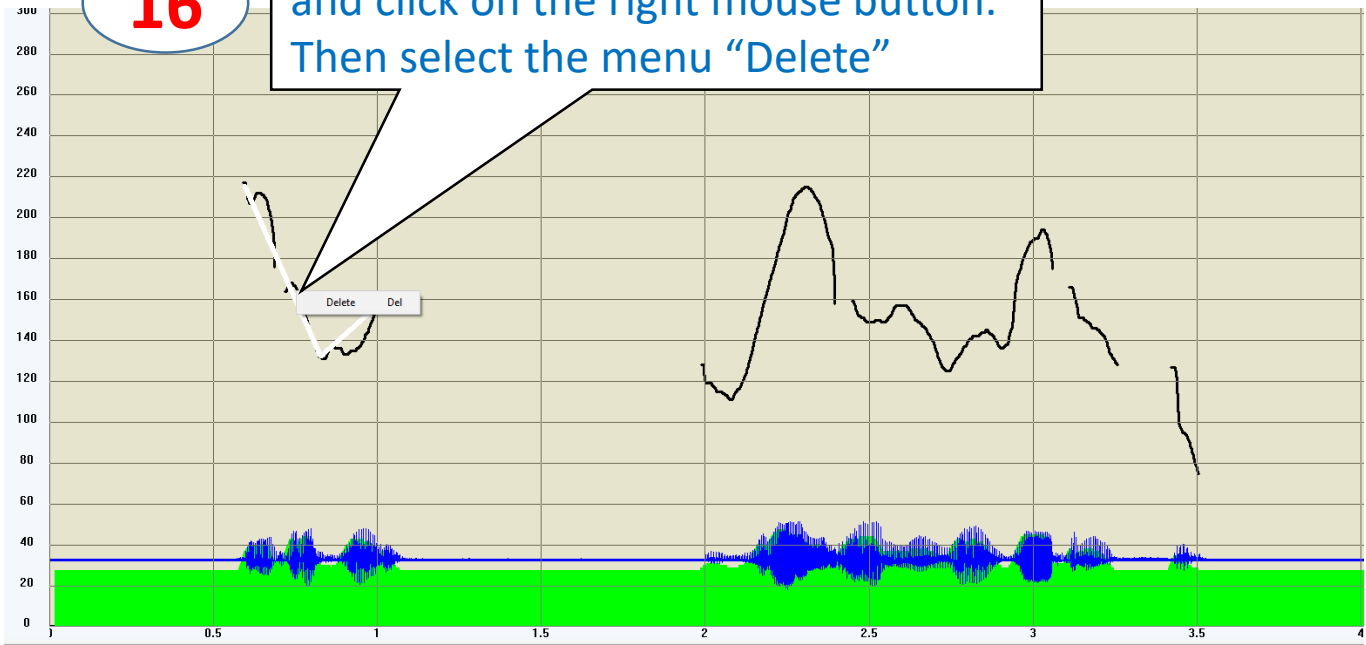
15

Click on "Delete"



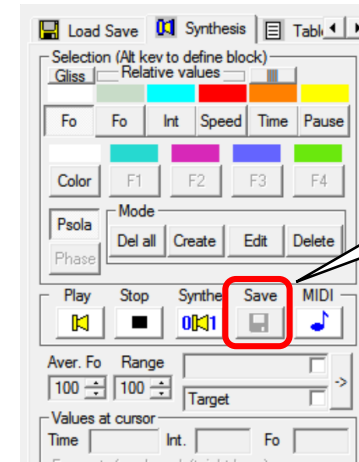
16

Then position the cursor on the track and click on the right mouse button. Then select the menu "Delete"



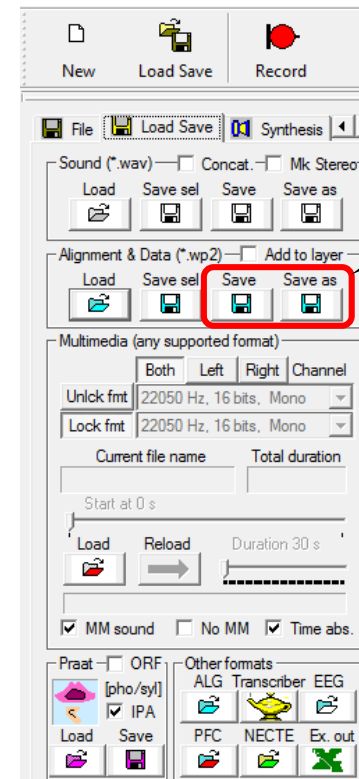
## Sequence of operations...

Morphed speech can be saved clicking on the “Save” button



Save morphed speech

All tracks are saved in wp2 format using the “Save” button in the “Load Save” command box



Save tracks in wp2 format