Pitch Instruments Inc.

WinPitch Basic user 's manual

WinPitch by Pitch Instruments Inc.

WinPitchW10 for prosodic research, with on the fly aligner, real-time spectrograph, multi-tracking F0 analysis, video and audio analysis, and much more (Installation password required after 30 days of use).



First use: get and enter your password

License X				
ſ	WinPitchW10 http://www.winpitch.com Copyright (C) 1996-2016 Pitch Instruments Inc.			
F	(This ID is needed to obtain your registration password) To get your registration password write to info@winpitch.com mentioning your Validation ID Register 13 day(s) left to use the unregistered program	_		
	To register, enter your registration password:			
	and click on "Register" Register (You have to be logged as administrator o register)			







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WinPitch screen is divided into the following control and display sections:

- The menu, allowing direct commands by selecting an item in the menu;
- 2. The tool bar, accessing various commands by clicking on the corresponding icons;
- The dialog bar, a set of dialog boxes grouping functions and adjustment parameters;
- A wave window, allowing the selection of section of the signal (sound) to analyze;
- 5. Alignment layers, displaying aligned text;
- 6. An analysis window displaying the various analyses performed on the part of signal selected in the wave window.





Wave window zoom and pan

By default, the wave duration displayed in the wave window is equal to the sound duration or 30 seconds, whichever is shorter (this 30 sec. value can be changed in the Setup page).

To change the duration displayed, use the wave zoom vertical slider (a). To pan the wave window along the signal, use the horizontal wave pan slider (b).

To adjust the wave amplitude displayed in the wave window, use the vertical wave amplitude slider (c).

To invert the wave phase (180 degree shift), click in the wave phase inverter check box (d).

The section of wave displayed in the wave window is re-analyzed and the analysis displayed each time you click on the Refresh icon on the tool bar. The actual display depends on the display options selected (in the illustration, the wave form, the intensity and fundamental frequency curves as well as the wide band spectrogram corresponding to the section of sound signal selected in the wave window are displayed). B





Wave window block

You can also select a section of the wave form by defining a block inside the portion of signal displayed in the wave window.

To define a block, position the mouse cursor on the starting point in time of the block you want to define. Click on the mouse left button and drag the cursor to the ending time position of the block keeping the mouse left button down. Release then the mouse button. The block will be defined (in white on the figure), the analysis window (on top) will be updated to correspond to the signal section defined by the block, and the sound section will be played back (option selectable in the Setup page).

You can move the block by position the cursor about its middle position. The cursor takes then a 4 side arrow shape, indication you can drag the block by keeping the mouse left button down.

You can move the left or right edges of the block by positioning the cursor near the block edge you want to move. Press the mouse left button and drag the cursor to its new position.

For both block changes, the analysis window will be updated and the corresponding sound will be played back when you release the mouse left button.

A block can be erase by clicking outside it anywhere in the wave window, or by pressing the mouse right button.

Analysis window zoom level

C





C Analysis window zoom level

A third zoom function is provided in WinPitch. Concurrently with the A and B signal selection processes, you can define an analysis screen zoom level (box a), which generates a virtual upper window up to 10 times its normal horizontal size. You can then pan this window along the time axis with the horizontal time slider in the analysis window (b), without the need to refresh the analysis.



WinPitch aided alignment

Alignment is a basic operation in phonetic research. Previously done manually in a transcription into an either orthographic or phonetic representation, this operation is quite time consuming and difficult to execute automatically through the use of speech recognizers.

WinPitch has another approach, by allowing the user the select the graphic units as (s)he perceived them. By slowing down the speech playback rate by a selectable factor of 1 to 7, it becomes quite easy to synchronize the operator cursor positioning and mouse clicking with the perceived sound unit, be a sentence, a word or even a syllable. At each mouse click, the ending time of the current unit is automatically defined and entered in the alignment database. At any time of the process, the alignment can be verified and edited by using the karaoke playback function.

Text pre-formatted with the C-ORAL-ROM conventions will be automatically aligned in up to 8 speakers or events levels.

For ease of operation, the playback rate is dynamically adjustable by the user while the alignment process takes place. Inserted unit markers can be easily edited, and text transcription can be entered and edited as well in an alignment session.

The alignment output is generated in XML as well as Excel® formats. Various tools are provided to allow the user to navigate in the alignment database, and obtain the acoustical analysis of aligned units quickly and easily.



The text window is hidden when you select another dialog page, but can be set to be displayed permanently with the "Show always" check box (e).

The text font size is adjusted with the "+" and "-"buttons (f), and the text can be protected or be edited with the 'Lock" check box (g). Alignment layers

Β





Semi automatic alignment

С



D

Transcribe page





E



You can define a segment by positioning the cursor on an alignment layer and RIGHT clicking the mouse button. You then select the desired option: Create a segment, Cut a segment in half, Merge a segment with an adjacent segment or delete a selected segment.

Editing segments

F





Layer hierarchy





<?xml version="1.0" encoding="iso-8859-1" ?> <!DOCTYPE Alignment (View Source for full doctype...)> - <Alignment> <TimeStamp Value="Thursday, May 30, 2002 time 00h 10m 04s" /> <WinPitch Program="Aligner" Version="1.0" /> <Trans version="1.0" creationDate="Thursday, May 30, 2002 time 00h 10m 04s" audioFilename="C:\\FRA10.WAV" textFilename="C:\en mil neuf cent.rtf" /> <Layer1 Name="Syllabe" ID="syllabe" Short="Syl" Color="RGB(145,213,110)" /> <Layer2 Name="Event" ID="desc" Short="Evt" Color="RGB(213,145,220)" /> <Layer3 Name="Text" ID="text" Short="Txt" Color="RGB(145,145,213)" /> <Layer4 Name="Turn" ID="speaker" Short="Trn" Color="RGB(228,228,228)" /> <Layer5 Name="Section" ID="type" Short="Sec" Color="RGB(200,213,180)" /> <Layer6 Name="Background" ID="background" Short="Bak" Color="RGB(213,222,140)" /> <Layer7 Name="Episode" ID="episode" Short="Epi" Color="RGB(120,195,200)" /> <Layer8 Name="Comment" ID="comment" Short="Com" Color="RGB(255,228,255)" /> <UNIT speaker="Syllabe" startTime="0.000" endTime="1.244" Channel="M">En mil neuf cent soixante dix-sept,</UNIT> <UNIT speaker="Syllabe" startTime="1.244" endTime="3.137" Channel="M">le ministère de l'Education Nationale</UNIT> <UNIT speaker="Syllabe" startTime="3.137" endTime="3.648" Channel="M">recensait</UNIT> <UNIT speaker="Syllabe" startTime="3.648" endTime="4.100" Channel="M">cent treize</UNIT> <UNIT speaker="Syllabe" startTime="4.100" endTime="4.921" Channel="M">établissements</UNIT> <UNIT speaker="Syllabe" startTime="4.921" endTime="5.399" Channel="M">de ce type.</UNIT> </Alignment>

More details: the Tool bar



- New: create new analysis window
- Load Save: load and save files in various formats
- **Record:** access to recording functions
- Stop: stop playback and recording
- Play: access to playback and sound editing functions
- Synthe: access to speech synthesis and prosodic morphing functions
- Refresh: rewrite screen
- Lens: access to detailed waveform, Fourier, LPC and wavelet at cursor position
- Spectro: access to spectrogram functions
- Text: access to text functions





Tag: add on screen tags for comments Highlight: access to highlight screen sections functions Layers: access to layers (= tiers) functions Align: access to transcription and (semi)automatic align functions Statistics: access to data and statistical analysis function MIDI: access to filtering and MIDI playback functions **Print:** access to print graphic data functions Setup: access to display setup functions **Grooming:** select spectral parameters for FO analysis Fo: select F0 tracking method, parameters and annotation **Postprocess:** select F0 curve smoothing parameters



Load and Save functions





Wp2 file is a text file which includes information added to the sound file (text, highlight, annotation, transcription, etc.)

<WinPitchW10 Output file - Version 1.0/> <Date date="Wednesday, February 22, 2017 time 17h 45m 28s"/>

<audioFilename>Redresser la France synthe.wav</audioFilename>

<videoFilename></videoFilename>

<TimeStamp Value="Wednesday, February 22, 2017 time 17h 45m 28s"/>

<WinPitch Program="Corpus" Version="Version U2.00"/>

<Trans version="1.0" creationDate="Wednesday, February 22, 2017 time 17h 45m 28s" audioFilename="Redresser la France synthe.wav" videoFilename="" textFilename="Redresser la France synthe.rtf"/>

<Layer1 Name="Layer 1" ID="Layer1" Short="L 1" TagName="" TagSet="" Color="RGB(145,213,110)"/><Layer2 Name="Layer 2" ID="Layer2" Short="L 2" TagName="" TagSet="" Color="RGB(213,145,220)"/><Layer3 Name="Layer 3" ID="Layer3" Short="L 3" TagName="" TagSet="" Color="RGB(145,145,213)"/>

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Any supported media files can be loaded (depending on installed Codecs, ex. K-Lite Codec Pack Full).





Load and Save functions





Copy selected screen window Formats: bmp, jpg, gif, png)

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Record functions



Windows recording

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Record functions























Spectrogram functions















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Highlight functions







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Align functions





Align functions

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A A Exact *L 1: Mes chers compatriotes Je m'adresse à vous ce soir pour vous faire connaître la décision que j'ai prise dans la perspective de la prochaine élection présidentielle^{\$} Depuis euh^{\$} mai 2012\$ c'est à dire\$ la date\$ à partir de laquelle je suis devenu président de la République^{\$} j'ai agi avec les gouvernements^{\$} de Jean Marc Ayraults et de Manuel Vallss pour redresser la France^{\$} et la rendre plus juste^{\$} Aujourd'huis au moment où je m'exprimes les comptes publics sont assainiss la Sécurité sociale est à l'équilibres et la dette du pays a été préservée^{\$} J'ai^{\$} également voulu que notre modèle socials puisse être confortés parce que c'est notre bien commun§ Je l'ai même élargi§ pour permettre à ces travailleurs\$ qui avaient commencé^{\$} très tôt leur vie professionnelle^{\$} de partir plus précocement à la retraite\$ J'ai fait en sorte ques à chacune et à chacuns puisse être accordée^{\$} une complémentaire santé^{\$} Dans ce contexte j'ai aussi voulu\$ placer la France au premier rang\$ Au premier rang\$ de la lutte contre le réchauffement climatiques et c'est à Paris[§] oui à Paris[§] que l'accord historique a pu être signés et qui a engagés le monde entiers J'ai voulu aussi que l'école dispose des moyens indispensables\$ ceux là même qui lui avaient été ôtés\$ dans la période précédente\$ parce que l'école\$ c'est le pilier\$ de la République\$ J'ai fait avancer les libertés le mariages a été ouvert à tous les couples^{\$} l'égalité entre les femmes et les hommess à été renforcées et la lutte contre les discriminations^{\$} celles qui blessents a été amplifiées J'ais égalements modernisé notre démocraties avec la réforme territoriales celle dont on parlaits régulièrements et qui n'était jamais faites avec la fin du cumul des mandats\$ et avec également\$ la commencer par moi même\$ pour être dans 'exemplarité\$ Mais l'engagement majeur que avais pris devant vous\$ c'était de faire baisse e chômage<mark>\$</mark> J'y ai consacré**\$** avec les gouvernements^{\$} toute mon énergie^{\$} j'ai pris tous les risques\$ j'ai\$ allégé les charges des entreprises\$ parce que c'est\$ la condition pour

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File Edit View Tools Setup LingLab Window Help



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File Edit View Tools Setup LingLab Window <u>H</u>elp



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1 Name	Width	T 1 [s]	T 2 [s]	F0 1 [s] F0	0 2 [Hz]	Duration [s]	Range [Hz] F	0 1 [ST] I	=0 2 [ST] Int 1 [dB] In	t 2 [dB]	Diff Int [dB]	Glissando [st/s] Glissando ratio	Distance					
2																				
3 Cn	(5 1396.976	1397.044	173	172	0.067	-1	9		9 34	26	-8	9//70	0.128	24					
4 C1	(5 1397.458	1397.621	150	225	0.163	75	7	1	4 28	24	-4	46//11	4.181	91					_
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Prosodic annotation functions

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Name	Width	T 1 [s]	T 2 [s]	F0 1 [s]	F0 2 [Hz]	Duration [s]	Range [Hz]	F0 1 [ST]	F0 2 [ST]	Int 1 [dB]	Int 2 [dB]	Diff Int [dB]	Glissando [st/s]	Glissando ratio
2															
3	Cn	6	0.491	0.534	156	168	0.043	12	7	8	31	33	2	29//168	0.172
4	Cn	6	1.056	1.093	150	139	0.037	-11	7	5	33	28	-5	39//226	0.172
5	Cn	6	1.440	1.481	138	125	0.040	-13	5	3	39	29	-10	51//194	0.262
6	C0	6	2.069	2.146	102	084	0.077	-18	0	-3	37	25	-12	54//53	1.018
7	Cn	6	4.000	4.061	203	193	0.061	-10	12	11	38	37	-1	14//85	0.164
8	Cn	6	4.551	4.620	176	156	0.069	-20	9	7	40	23	-17	45//65	0.692
9	Cn	6	4.969	5.080	119	114	0.111	-5	3	2	33	34	1	7//25	0.280
10	Cn	6	6.020	6.095	132	152	0.074	20	4	7	33	36	3	35//57	0.614
11	C2	6	6.216	6.439	123	111	0.223	-12	3	1	31	6	-25	32//6	5.333
12	C1	6	7.056	7.140	119	157	0.084	38	3	7	16	35	19	74//45	1.644
13	Cn	6	8.428	8.511	152	152	0.083	0	7	7	38	26	-12	12//46	0.260
14	Cn	6	9.059	9.138	126	143	0.079	17	4	6	25	26	1	27//50	0.540
15	Cn	6	9.520	9.595	133	126	0.074	-7	4	4	37	32	-5	17//57	0.298
16	C0	6	10.091	10.163	092	077	0.072	-15	-1	-4	24	11	-13	54//61	0.885
17	Cn	6	11.669	11.734	184	213	0.064	29	10	13	28	32	4	42//75	0.560
18	C2	6	12.621	12.770	141	118	0.148	-23	5	2	34	27	-7	27//14	1.928
19	Cn	6	13.305	13.350	122	138	0.044	16	3	5	36	37	1	47//158	0.297
20	C1	6	13.760	13.921	113	219	0.160	106	2	13	33	24	-9	79//12	6.583
21	Cn	6	14.857	14.936	121	109	0.079	-12	3	1	38	30	-8	30//50	0.600
22	C1	6	15.131	15.258	114	207	0.127	93	2	12	37	22	-15	95//19	5.000
23	Cn	6	16.854	16.897	167	148	0.043	-19	8	6	37	33	-4	50//170	0.294
24	C1	6	17.157	17.265	160	201	0.108	41	8	12	34	31	-3	39//27	1.444
25	Cn	6	17.916	17.990	140	159	0.074	19	5	8	25	36	11	40//57	0.701
26	C0	6	18.429	18.562	101	100	0.133	-1	0	0	22	18	-4	4//17	0.235
27	C1	6	20.047	20.196	122	207	0.149	85	3	12	34	24	-10	71//14	5.071
28	Cn	6	20.508	20.631	136	133	0.122	-3	5	4	38	32	-6	8//21	0.380
29	C1	6	21.162	21.316	128	211	0.153	83	4	12	31	25	-6	61//13	4.692
30	Cn	6	22.302	22.350	141	156	0.048	15	5	7	39	34	-5	40//138	0.289
31	Cn	6	22.665	22.730	137	160	0.064	23	5	8	32	31	-1	41//76	0.539
32	C2	6	23.085	23.256	119	111	0.170	-8	3	1	35	27	-8	15//10	1.500
33	C1	6	23.789	23.926	111	222	0.137	111	1	13	33	16	-17	104//17	6.117
34	Cn	6	25.428	25.452	153	138	0.024	-15	7	5	36	27	-9	79//553	0.142
35	C2	6	25.791	25.918	150	127	0.127	-23	7	4	36	24	-12	33//19	1.736
36	C1	6	26.485	26.598	126	176	0.112	50	4	9	33	25	-8	58//25	2.320

Transfer prosodic annotation to Excel









Data ana	lysis	functi	ions
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👂 Setup 📶 Statistics 📥	• •
Scope	- Selection
Block Screen Highlights All except highlights Layer All buffer Layer text	 □ Fo > 0 ☑ Intensity □ Jitter □ Shimmer □ Pause □ Formants
Sampling mode	
Marker sampling	
Time sampling	20 <u> </u>
Samples in scope	
Period synchronized	2
Contours	
Transfer samples (*.wav files)
0 Escap	e key to abort
Sampling screen duration:	28.980 s
Excel Te	xt .Pitch
File	
Batch 🖻	3 🔶
0	
- Speech rate (displayed scree	en)
-> 5.400 sy	//s
Segmentation V All Comp L 1 V Nb Segment Nb Insertion Average diff [ms] Stand Identical < 10 ms < 20 r	NbDeletion lard Dev ms < 50 ms ms > 500 ms

📑 MIDI 🖉 Print 🕅 Grooming 🖂 💶
Print Abort Setup Preview
Scope Press Escape to abort
C All buffer Left Right
Start [s] End [s]
Text
Screen
30000 - Imag /Page 2 -
illiag/rage
Orientation
C Portrait (• Landscape
Alignement
O Left Center O Right
O Up (• Mid O Down
Dimension
Honzontal 100 🕂 Vertical 90 🛨
Header and footer
WinPitchW10 - V. 1.0 - Thursday, February 2:
WinPitchW10 - [D:\MyDocuments\WinPitch co

Print functions

General setup command boxes F0 (melodic curve) Intensity curve Waveform Time (duration) curve Layer definition Screen parameters









curve





definition





Setup transcription layer definition











m Grooming Fo tracking To P
Fourier Brush All Default
Freq resol: / 21 Hz 1024 Samples
Time resol: / 46 ms
- Window
Hamonic selection
Zero Contrast High Delta S/N
-15 dB 1.8 0 dB 40 dB 12 dB
: :-,:2:1 1
Fmin: 60.Hz Fmax: 1000.Hz
-Comb / Brush retained harmonics
171.655 s 2130 Hz 1102 Hz
Time Frequency F max
BandPass intensity — Enable —
Duration: 23 ms Lock freg Intensity 512 Points
3700 Hz -3 dB
BandPass frequencies
Freq min 300 Hz Freq max 4000 Hz
Block duration 0.000 s 🗖 Smooth

0 left peaks Creak = 0 0 right peaks


Autocorrelation setup



Spectral comb setup

🕅 Grooming 🏼 Fo tracking 🦳 Fo P 🛀		
Global method AMDF		
Current method AMDF All		
Multi method 🗆 C 🗔 A 🗔 M 🗔 E		
Undo local method Buffer Screen Last		
Harmonic selection		
V Period Cepstrum		
- Fo Preset Fo Annotation		
Autocorrelation Grush		
Fo Range Reset Color Default		
Fmin: 70.Hz Fmax: 500.Hz		
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Amdf value 134 Hz		
Time 157.515 s Dur 0.023 s		
Parameters		
Length Clipping		
23 ms 30 %		

AMDF setup

👖 Grooming 🛛 🗛 Fo tracking 🦳 Fo P 💶		
Global method AMDF		
Current method AMDF All		
Multi method C A M B		
Undo local method Buffer Screen Last		
Harmonic selection Period L Cepstrum Fo Preset Fo Annotation Illin Comb AMDF Autocorrelation Brush Fo Range Reset Color Default Fmin: 70.Hz Fmax: 500.Hz J Brush value 0 Hz J Time Dur 0.004 s		
BRUSH Noise [0.1%] Tone [0.1%]		
Frames left Frames right Interval [ms] 2 - 2 - 2 - 50 - Width [Hz] Dev [%] Step [0.1%] 16 - 50 -		
Comb parameters in Comb selection box		

Spectral brush setup

🔺 Fo tracking 🦳 Fo Postprocessing 🚺		
	All Default	
Voicing	- Smoothing	
Nb zero Int. % harm. 100 18 dB 33 %	Dev. MedianVoicing 100 3 40	
Sampling Window	Overlap Min vowel	
Consistency Red	Screen duration	
Transition Blue	View Nb frame	
Creak Green	Screen Buffer Clear Check	
Press Escape to stop		

F0 curve smoothing parameters

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Default
Screen zoom
1 🕂 🔽 Refresh
Visible layers Visible layers
1 - Lock transcription
Wave size 🗌 Lock aligned text
120 📩 🗌 hh:mm:ss format
Layer size Right to left
24 📩 🗖 Thin cursor
Delta lock 🛛 🗖 Auto Save
5 ÷ Beep
Default duration Black & white
Background Thin cursor
Color Normalize Color
Text to speech
C Male 💿 Female
Language French (FR)
Shift stereo channel
<- Left channel
<- Right channel Right channel->

and it's available at www.winpitch.com (Fresh daily!)