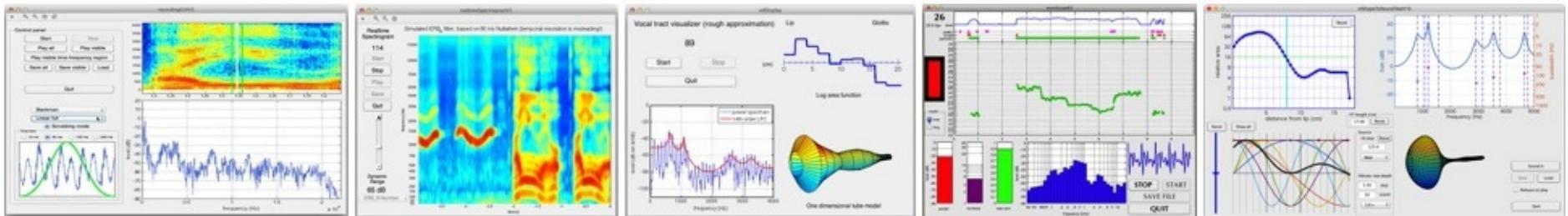


Matlab realtime speech tools and voice production tools

- 和歌山大の川原教授らによって開発されている音声処理ツール

公式ページ

<http://www.wakayama-u.ac.jp/~kawahara/MatlabRealtimeSpeechTools/>



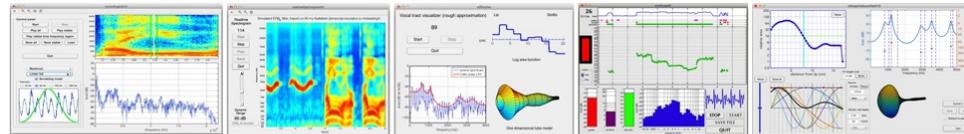
インストール①

Matlab realtime speech tools and voice production tools

by [Hideki Kawahara](#)

Matlab codes stored in this page are free to modify and use, since they are elemental and educational. Please check each license. I appreciate your comments and feedback. (In old Matlab versions, "audiorecorder" object does not allow data acquisition while it is running, and the tools in this page do not work.)

(Please mail [me](#), if you have any suggestions and/or feedback. I appreciate.)



Matlab code

- **Voice production tools:** (BSD 2-Clause License) Vocal tract shape to voice synthesis GUI with an anti-aliased L-F model source. ([Matlab source codes](#)) (23/August/2015: resize enabled)
Introduction to this tool was presented at a technical meeting of IEICEJ on 3rd August, 2015. (See the technical report below.)
 - [Link to the technical report of IEICEJ \(3/Aug./2015\)](#)
Kawahara, H., Sakakibara, K., Banno, H., Morise, M., Toda, T., and Irino, T., "Aliasing reduction in L-F model implementation for an interactive tool applicable to speech science education," IEICE Technical Report, EA2015-10, pp.1-6 (2015-08).
 - [Presentation slides \(PDF: 6MB\)\(3/Aug./2015\)](#)
 - [Quick tour \(movie: 60MB, 6 minutes\)](#)
 - [Soprano voice simulation \(movie: 16MB, 90 seconds\)](#)
 - Short movie fragments: ([Short demo](#)) ([LF model designer demo](#))
 - The following installers (24 August, 2015: resize enabled) download big files (approx. 750MB) from Mathworks
 - ~~Stand alone application for Mac OSX (64bit) ([installer](#))~~
 - ~~Stand alone application for Windows (64bit) ([installer](#))~~
- [Latest all in one package \(31/Aug./2015\)](#) (This GUI version is machine independent. GUIs are resizable now.) (Please refer to [pp.5-11 of APSIPA Newsletter Issue9.](#))



Matlab realtime speech tools by Hideki Kawahara is licensed under a [Creative Commons Attribution 4.0 International License](#).

- The following installers (24 August, 2015: resize enabled) download big files (approx. 750MB) from Mathworks
 - Stand alone application for Mac OSX (64bit) ([installer](#))(12/Sep./2015)
 - Stand alone application for Windows (64bit) ([installer](#))(12/Sep./2015)

Resources

こちらと間違えないように注意

公式ページから自分のOSに対応した
インストーラをダウンロード

インストール①

名前 ▲	更新日時	種類	サイズ
.DS_Store	2015/09/13 8:38	DS_STORE ファイル	7 KB
eventScopenstaller_web.exe	2015/09/13 8:18	アプリケーション	1,550 KB
realtimeSgramInstaller_web.exe	2015/09/13 8:15	アプリケーション	1,475 KB
recordingGUIInstaller_web.exe	2015/09/13 8:09	アプリケーション	1,568 KB
vtlDisplayInstaller_web.exe	2015/09/13 8:11	アプリケーション	1,497 KB

各インストーラを実行してインストールを行ってください
1つ目はコンパイラのインストールも行うため時間がかかります
(容量が非常に大きいので注意)
インストール後にショートカットを実行、もしくはインストール先の
applicationフォルダの実行ファイルから起動できます

使い方

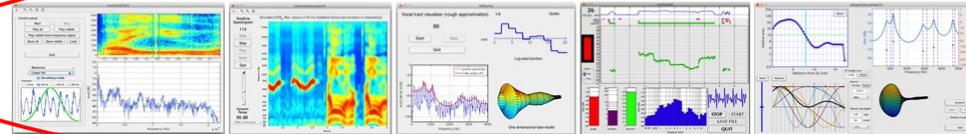
各ツールの画像から簡易的な使い方のムービーをダウンロードできます

Matlab realtime speech tools and voice production tools

by [Hideki Kawahara](#)

Matlab codes stored in this page are free to modify and use, since they are elemental and educational. Please check each license. I appreciate your comments and feedback. (In old Matlab versions, "audiorecorder" object does not allow data acquisition while it is running, and the tools in this page do not work.)

(Please mail [me](#), if you have any suggestions and/or feedback. I appreciate.)



Matlab code

- **Voice production tools:** (BSD 2-Clause License) Vocal tract shape to voice synthesis GUI with an anti-aliased L-F model source. ([Matlab source codes](#)) (23/August/2015: resize enabled)
Introduction to this tool was presented at a technical meeting of IEICEJ on 3rd August, 2015. (See the technical report below.)
 - [Link to the technical report of IEICEJ \(3/Aug./2015\)](#)
Kawahara, H., Sakakibara, K., Banno, H., Morise, M., Toda, T., and Irino, T., "Aliasing reduction in L-F model implementation for an interactive tool applicable to speech science education," IEICE Technical Report, EA2015-10, pp.1-6 (2015-08).
 - [Presentation slides \(PDF: 6MB\)\(3/Aug./2015\)](#)
 - [Quick tour \(movie: 60MB, 6 minutes\)](#)
 - [Soprano voice simulation \(movie: 16MB, 90 seconds\)](#)
 - Short movie fragments: ([Short demo](#)) ([LF model designer demo](#))
 - The following installers (24 August, 2015: resize enabled) download big files (approx. 750MB) from Mathworks
 - Stand alone application for Mac OSX (64bit) ([installer](#))
 - Stand alone application for Windows (64bit) ([Installer](#))
- [Latest all in one package \(31/Aug./2015\)](#) (This GUI version is machine independent. GUIs are resizable now.) (Please refer to [pp.5-11 of APSIPA Newsletter Issue9.](#))

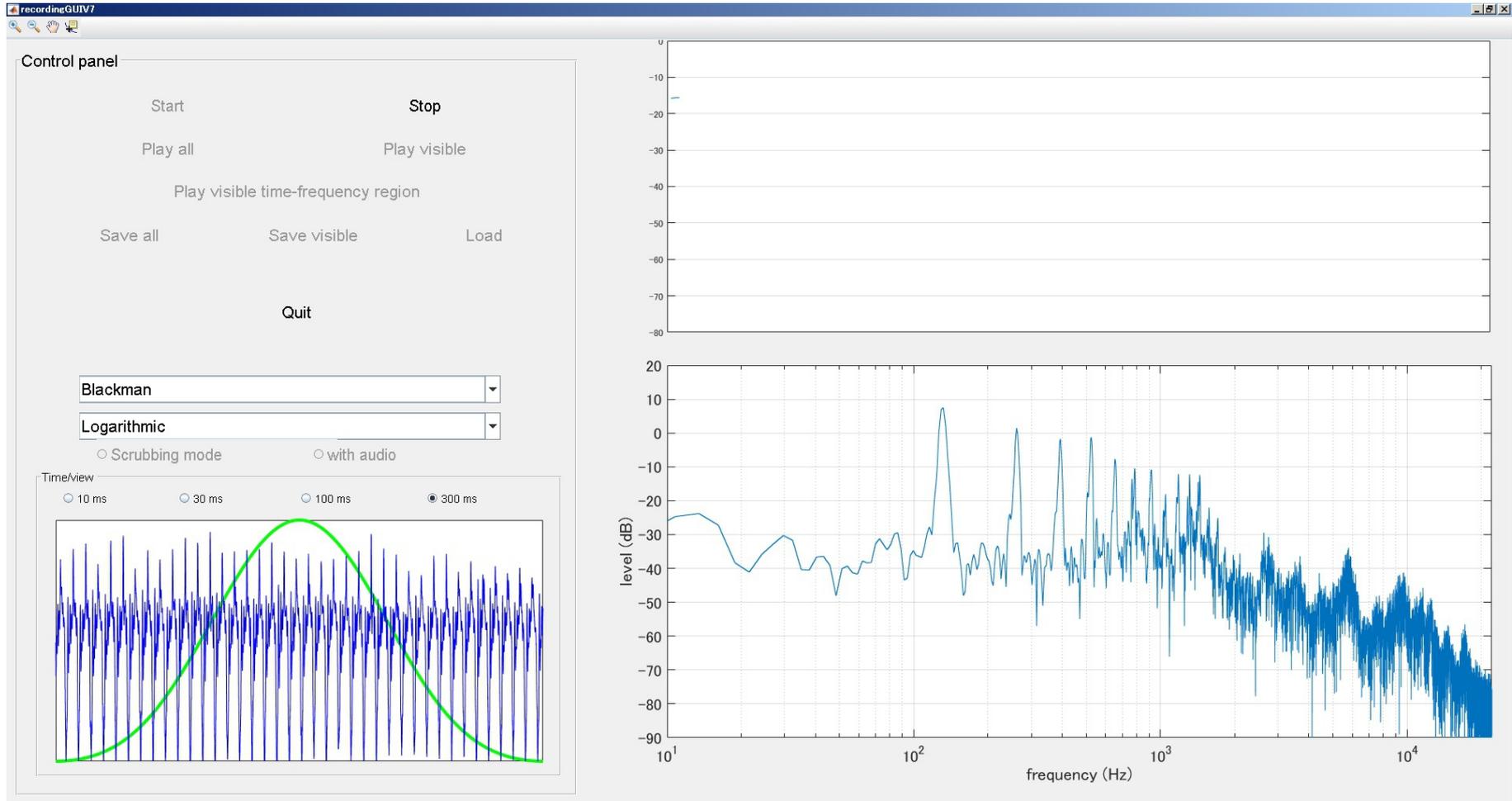


Matlab realtime speech tools by Hideki Kawahara is licensed under a [Creative Commons Attribution 4.0 International License](#).

- The following installers (24 August, 2015: resize enabled) download big files (approx. 750MB) from Mathworks
 - Stand alone application for Mac OSX (64bit) ([installer](#))(12/Sep./2015)
 - Stand alone application for Windows (64bit) ([installer](#))(12/Sep./2015)

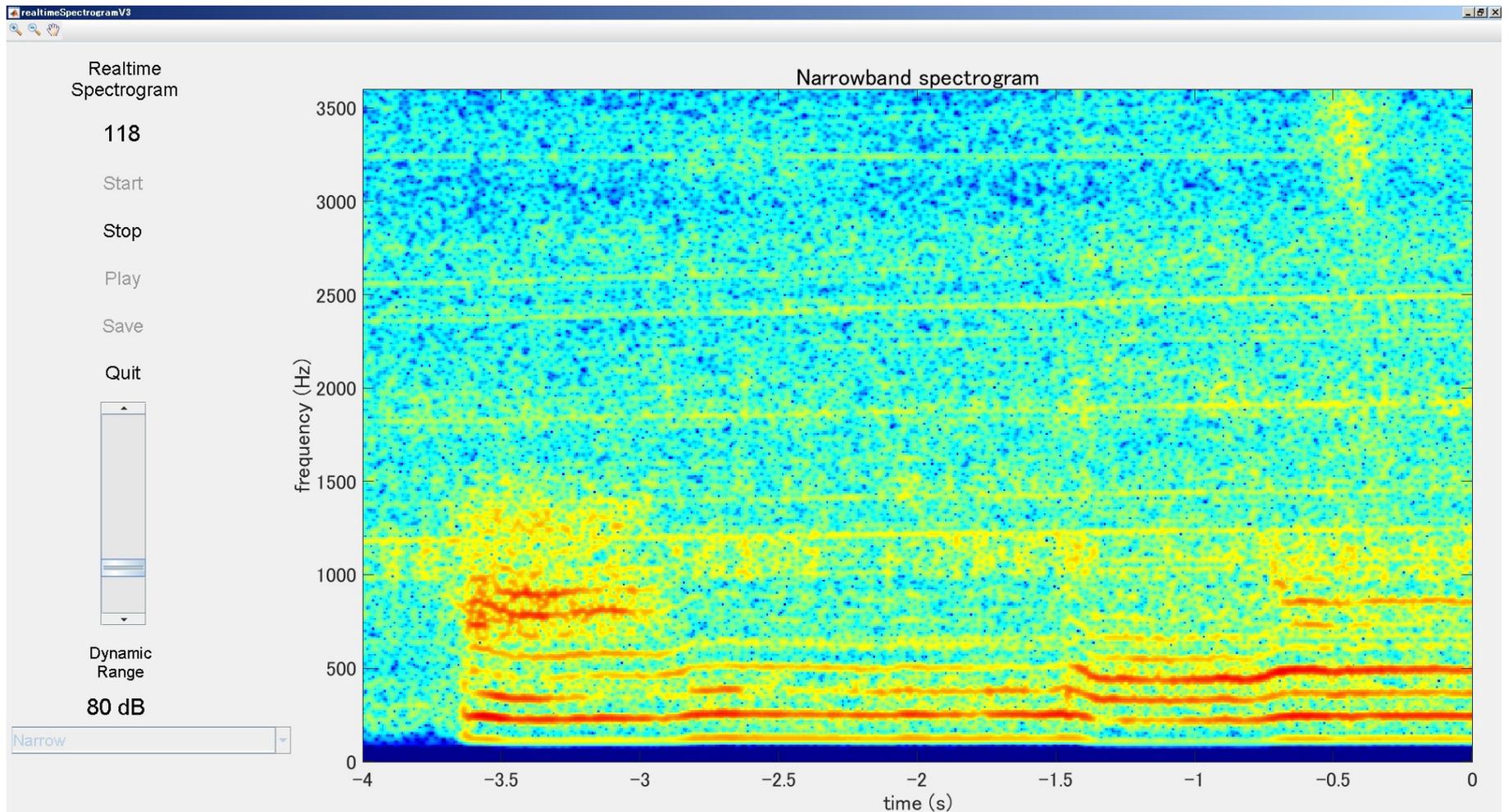
Resources

RecordingGUI



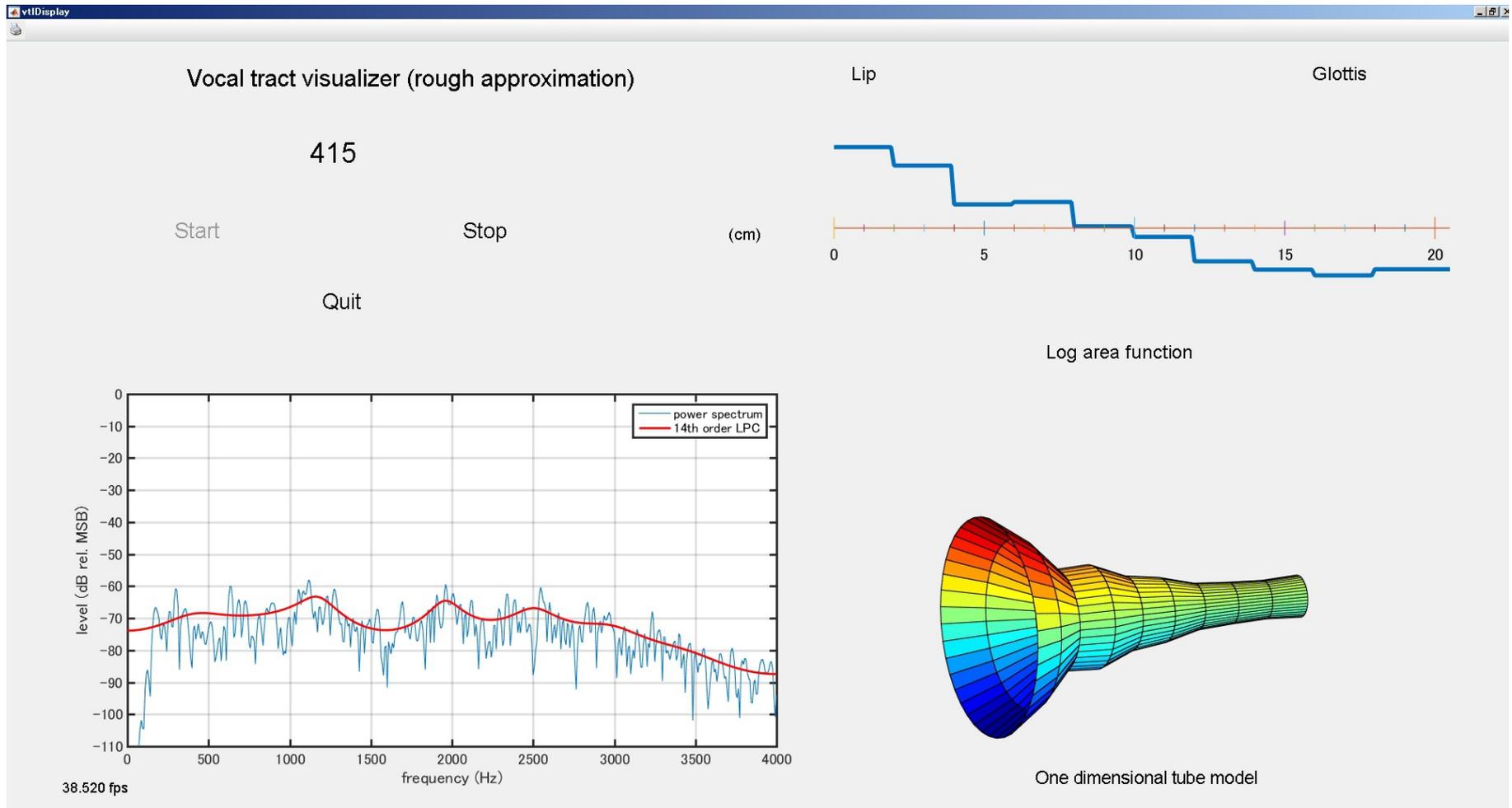
マイクに入力された音源の基本周波数とスペクトルをリアルタイムで表示
フィルタの種類などを変更可能

RealtimeSgram



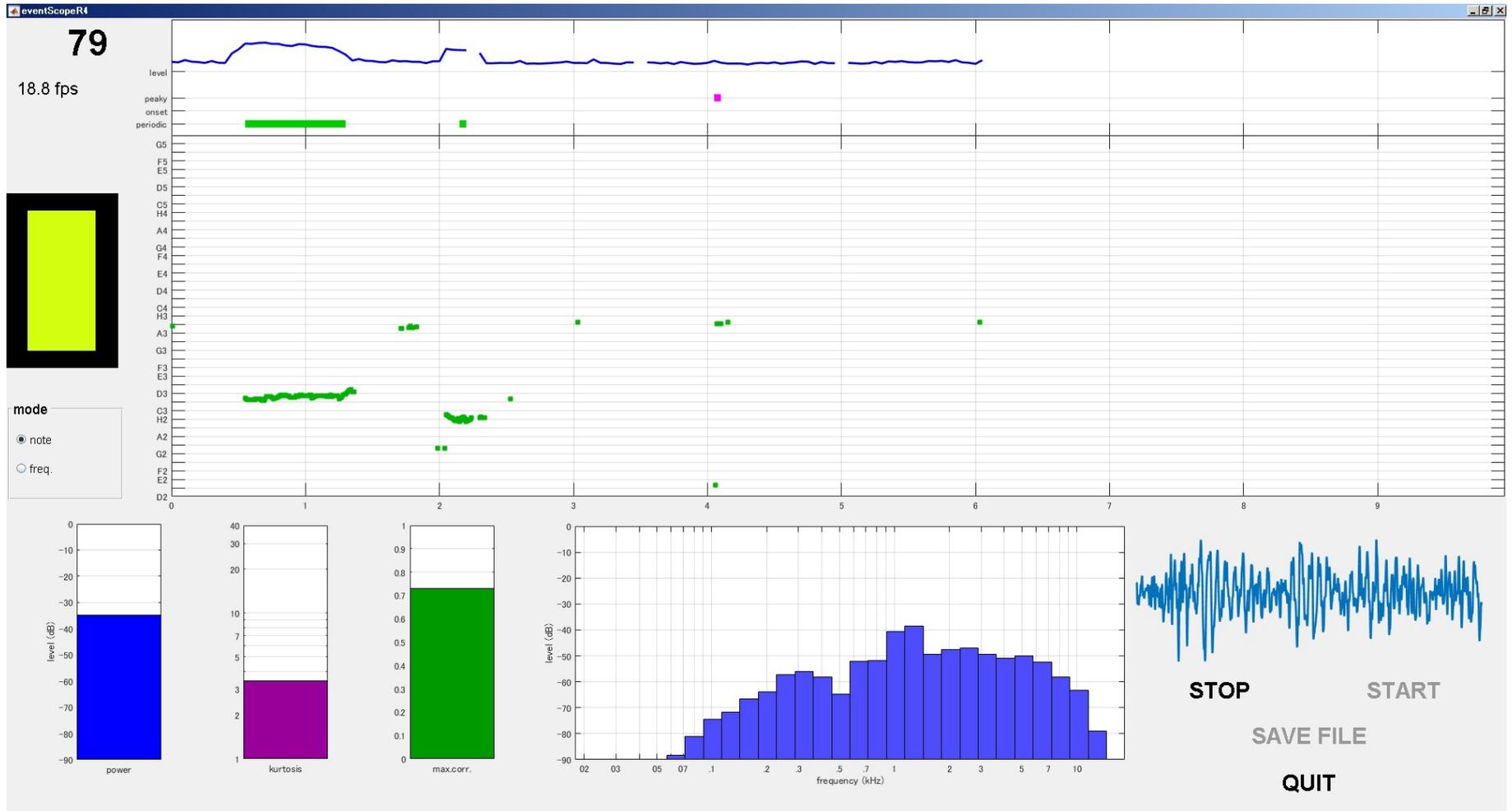
マイクに入力された音源のスペクトログラムをリアルタイムで表示
図左のバーによってダイナミックレンジを調節可能

vtlDisplay



音源のスペクトルおよびLPC分析によって得られるスペクトル包絡を表示(図左下)
LPC分析の結果に基づく声道の断面積比をにグラフ、モデルとして表示(図右)

EventScope



入力された音源の各パラメータ(基本周波数・パワー・自己相関・ピーク)と波形をリアルタイムで表示

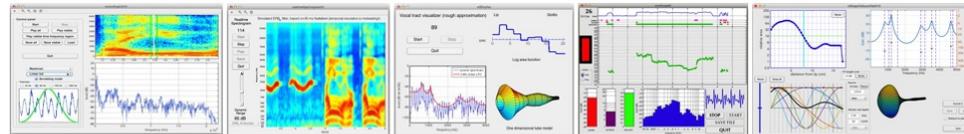
インストール②

Matlab realtime speech tools and voice production tools

by [Hideki Kawahara](#)

Matlab codes stored in this page are free to modify and use, since they are elemental and educational. Please check each license. I appreciate your comments and feedback. (In old Matlab versions, "audiorecorder" object does not allow data acquisition while it is running, and the tools in this page do not work.)

(Please mail [me](#), if you have any suggestions and/or feedback. I appreciate.)



Matlab code

- **Voice production tools:** (BSD 2-Clause License) Vocal tract shape to voice synthesis GUI with an anti-aliased L-F model source. ([Matlab source codes](#)) (23/August/2015: resize enabled)
Introduction to this tool was presented at a technical meeting of IEICEJ on 3rd August, 2015. (See the technical report below.)
 - [Link to the technical report of IEICEJ \(3/Aug./2015\)](#)
Kawahara, H., Sakakibara, K., Banno, H., Morise, M., Toda, T., and Irino, T., "Aliasing reduction in L-F model implementation for an interactive tool applicable to speech science education," IEICE Technical Report, EA2015-10, pp.1-6 (2015-08).
 - [Presentation slides \(PDF: 6MB\)\(3/Aug./2015\)](#)
 - [Quick tour \(movie: 60MB, 6 minutes\)](#)
 - [Soprano voice simulation \(movie: 16MB, 90 seconds\)](#)
 - Short movie fragments: ([Short demo](#)) ([LF model designer demo](#))
 - The following ~~installers~~ (24 August, 2015: ~~resize enabled~~) download big files (approx. 750MB) from Mathworks
 - Stand alone application for Mac OSX (64bit) ([installer](#))
 - Stand alone application for Windows (64bit) ([Installer](#))
- [Latest all in one package \(21/Aug./2015\)](#) (This GUI version is machine independent. GUIs are resizable now.) (Please refer to [pp.5-11 of APSIPA Newsletter Issue9.](#))



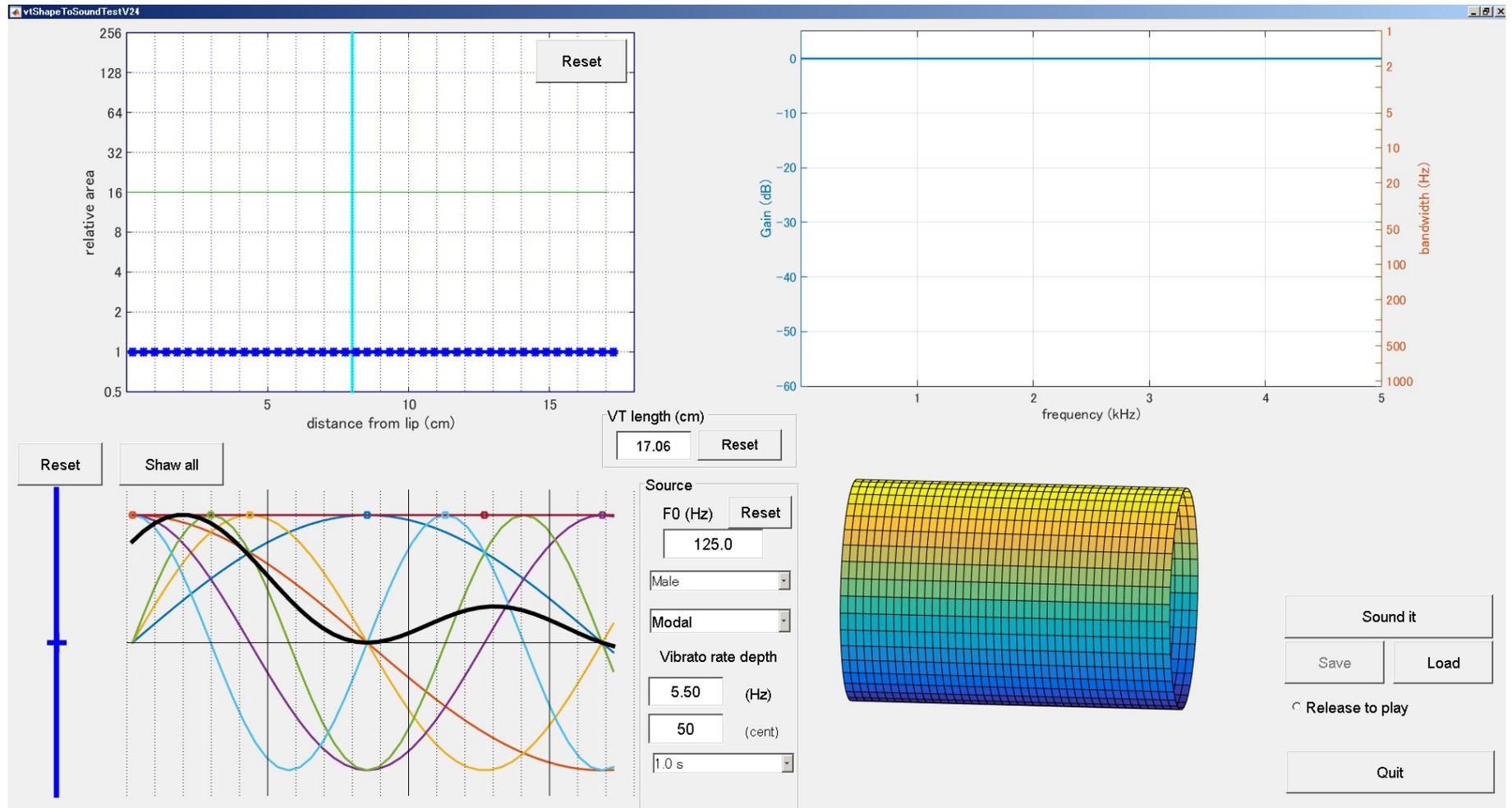
Matlab realtime speech tools by Hideki Kawahara is licensed under a [Creative Commons Attribution 4.0 International License](#).

- The following installers (24 August, 2015: resize enabled) download big files (approx. 750MB) from Mathworks
 - Stand alone application for Mac OSX (64bit) ([installer](#))(12/Sep./2015)
 - Stand alone application for Windows (64bit) ([installer](#))(12/Sep./2015)

Resources

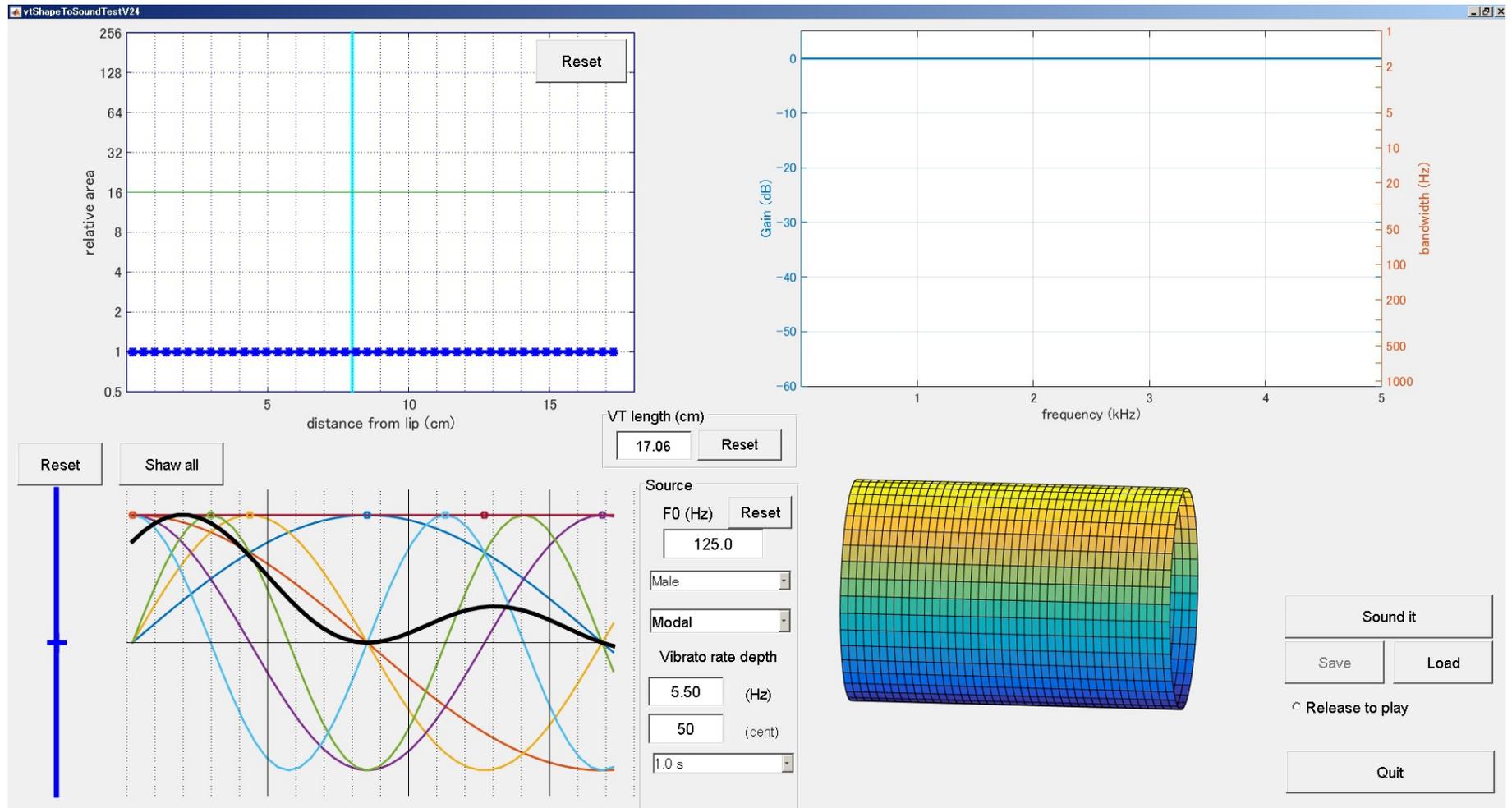
公式ページから自分のOSに対応した
インストーラをダウンロード、起動してインストール
(コンパイラの容量が大きいので注意)

vtToSoundLF



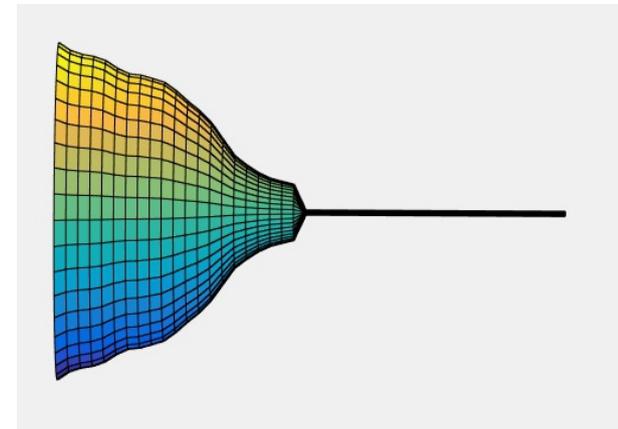
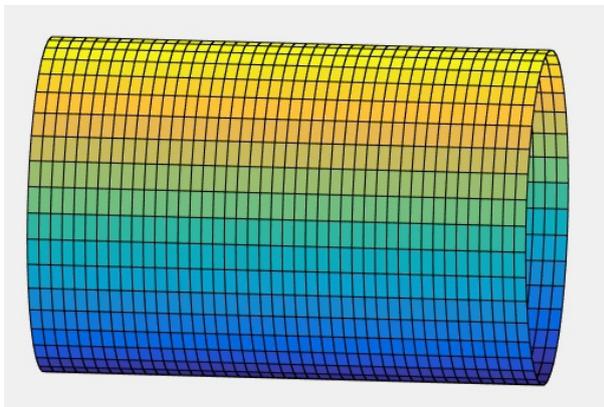
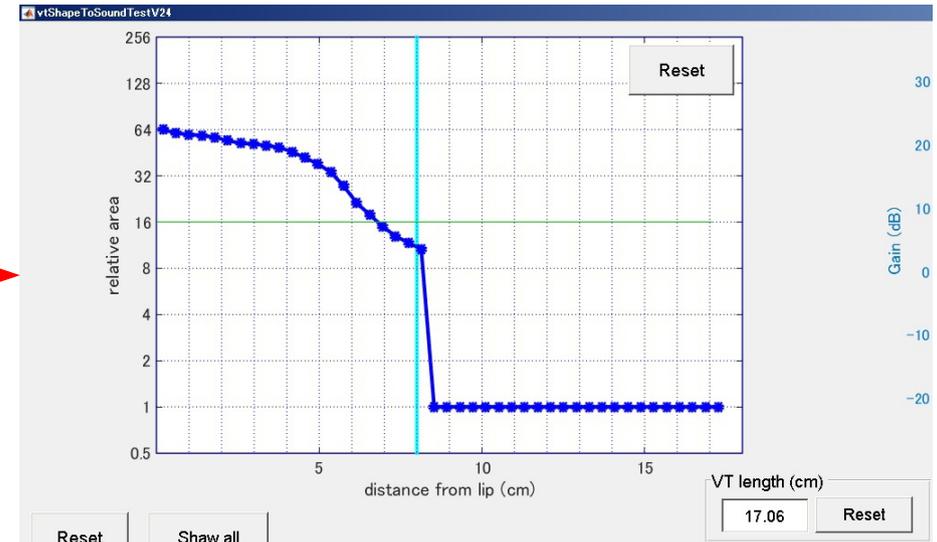
音源(基本周波数など)とその音源が通る声道の形を自由に設計できる
変更できるパラメータが多いので代表的なもののみ紹介
(他の部分が気になる場合は公式ページのデモムービーを参照して下さい)

vtToSoundLF



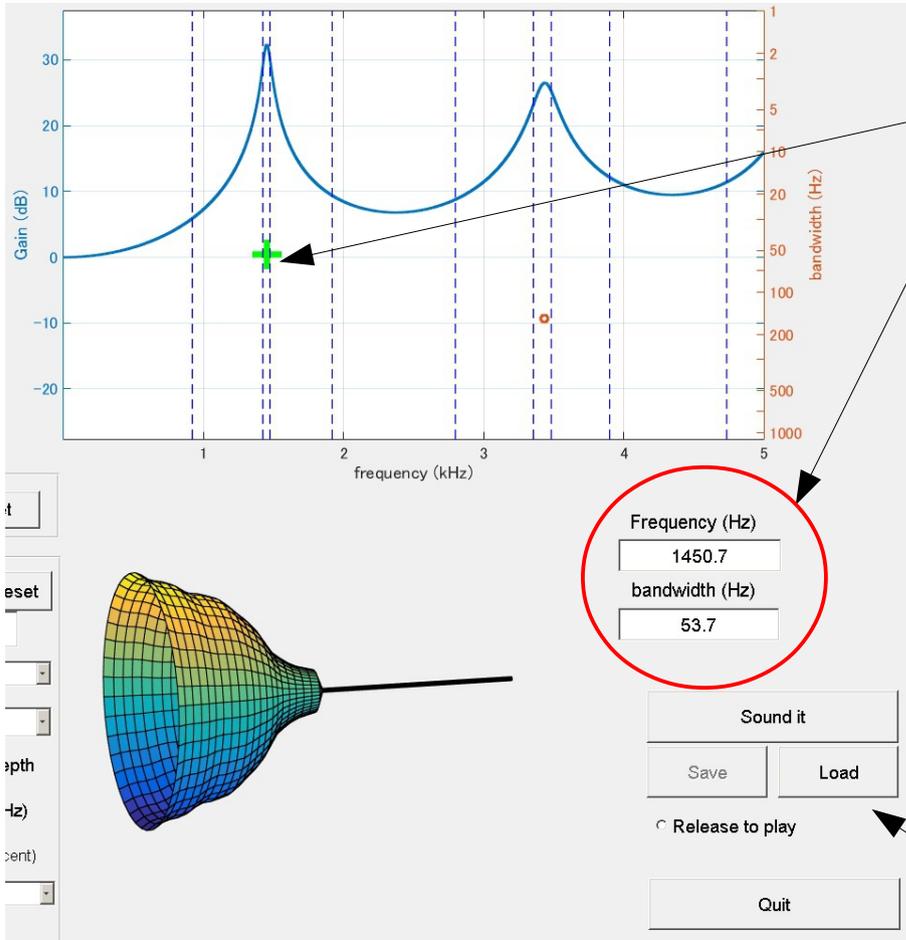
音源(基本周波数など)とその音源が通る声道の形を自由に設計できる
変更できるパラメータが多いので代表的なもののみ紹介
(他の部分が気になる場合は公式ページのデモムービーを参照して下さい)

vtToSoundLF



左上の図は声道の断面積比を表すグラフであり横軸が唇からの距離を表す
グラフ上でカーソルをドラッグすることで自由に断面積比を変更可能
右下の声道を表すモデルもそれに合わせて変化する
また、グラフ中の水色の線を横に動かすことで声道長を変更可能

vtToSoundLF



右上の図はLPC分析に基づくスペクトルを表す
図中の点を動かすか、点を指定して赤で囲んだ
部分によってパラメータを設定することでスペクトル
を自由に設計できる

「Sound it」ボタンを押すことで指定したパラメータ
からどのような音が生成されるかを確認できる
Save、Loadでパラメータの保存・読み込み