

tcStretch - User Guide

tcStretch is a VTS 2.4 plug-in for time stretching and pitch shifting audio material. The plug-in is available for Windows x64 (64 bit) and x86 (32 bit). This is version 0.5c of the software - a beta release.

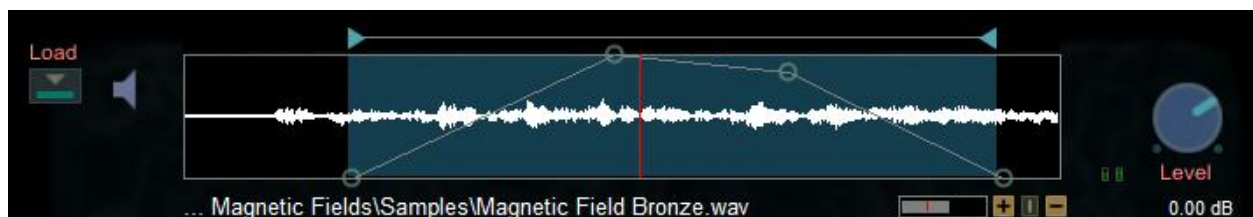
tcStretch time-stretches and/or pitch shifts a sample. Time stretching can range from normal playback rate (Host DAW sample rate) to 10^9 (one million) times more slowly. Pitches can range plus or minus one octave. Playback can move forward or backward through the sample. Playback rate can be automatically adjusted between transient and non-transient material to preserve (or blur) transients.

To **install** tcStretch, copy the dll to your DAW plugin folder.

To **use** tcStretch, launch the plug-in from your DAW. Click the **Load** button in the upper left corner to load a WAV or AIFF file, or drag-and-drop a file onto the GUI if your DAW supports that. Upon loading, tcStretch will analyze the file which may take some time depending on the size of the file. When analysis is complete you will see a waveform in the top display, a transient contour in the middle display box and a spectrograph in the bottom display box. Use the transport controls to start and stop tcStretch playback.

The **upper section** contains the Load button, an Audition button (looks like a speaker) to listen to the unaltered original sample, the waveform display, region selectors, volume envelope handles, zoom controls, a scroll control, tiny RMS meters showing the output RMS level, and a Level control to set the overall output level of tcStretch.

The waveform display shows the left channel of the source sample.



The circles on the waveform display are **Volume Envelope** handles. Drag to set playback volume curve.

The two blue triangles above the waveform display are **Region Selector** handles. Drag them to select the start and end points of the playback region. Drag the line between the handles to slide the entire region. You can use the volume envelope to add fade in and fade out to the region if desired.

The **Scroll** and **Zoom** controls allow you to zoom and scroll the waveform display. They do not affect the playback, but can be used for examining the waveform in greater detail and for finer control of setting region endpoints and volume envelope handles.

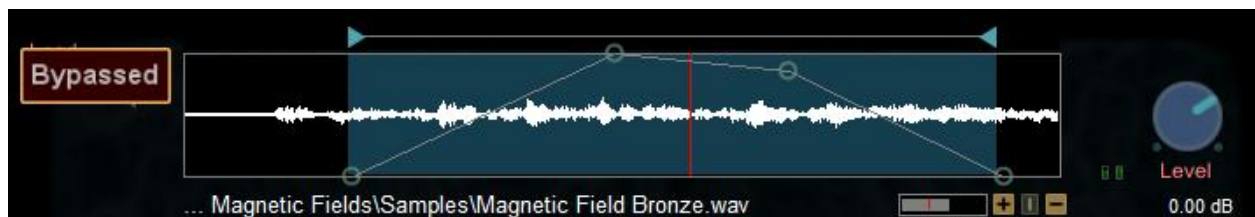


The Scroll control is the horizontal gray bar. The gray portion represents the size of the visible area of the waveform (per the current zoom level).

The Zoom controls allow you to zoom in (plus), zoom out (minus), zoom drag (vertical bar).

Output **Level** ranges from -infinity to +6dB . Default is 0 dB.

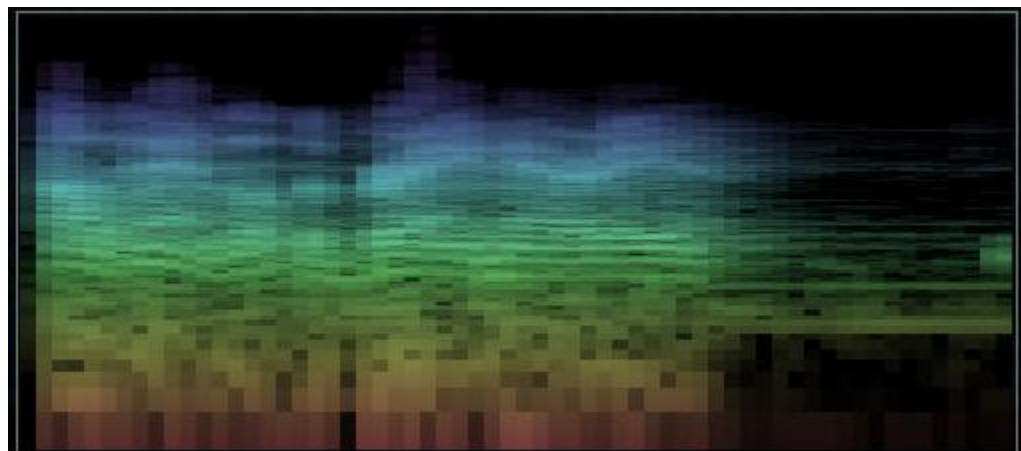
The **Bypass Indicator** (covering the Load and Audition buttons) is displayed when tcStretch is not receiving audio processing callbacks from the host DAW. When the Bypass Indicator is lit, tcStretch does not do any internal processing and does not load files or produce output. The exact means to cause a plugin to be bypassed varies by DAW (track is muted, track is muted and not armed, plugin is in an offline state, etc) and the exact means to correct or un-bypass the plugin also varies by DAW, so check your DAW manuals for specifics.



The **Transient Contour** shows the transients detected in the loaded sample. The Contour control emphasizes or de-emphasizes the non-peak transients.



The **Spectrograph** displays the spectrograph of the source sample. Lower frequencies are at the bottom in red, higher frequencies towards the top in purple.



The **Playback Rate** sliders control the playback rate. The Nominal slider sets the playback rate for non-transient material. The Transients slider sets the playback rate for transient material. Setting them the same effectively plays all the material at the same rate. The green square button enables the transient slider. If you deselect that button the transient slider is grayed out and the transients play back at the same rate as the non-transient material.



The indicator bean between the Nominal and Transient slider handles that shows the instantaneous playback rate.

The [X] button next to the Extreme label enables the extreme stretch mode. Normal stretch mode ranges playback from 1 to 1000 times slower. Extreme stretching increases the range to 1 million times slower.

The **Transport** control group has controls to start playback (triangle), pause playback (double bars), stop playback (square), and enable synchronization with the host transport (horizontal lines).

When host transport synchronization is enabled, playback occurs while the host transport is running, or while the Play button is engaged and the host transport is not running. When host transport synchronization is disabled, playback is controlled by the Play, Pause and Stop buttons alone. The Pause button pauses playback in all modes.



The Sync icon looks like this when Sync is engaged >



The **Direction** control group has controls for setting playback direction: <Reverse, Forward<>Reverse, and Forward>. Forward<>Reverse changes direction at the end of the sample.



The **Wander** control group adds some randomness to the playback. Wanderings are random changes in direction that last for a configured amount of time. "Every so often, change direction for a while". The green led enables and disables wandering. When lit, the Wander, Stay, and R/F knobs define the probability, duration and direction of wanderings.



The Wander knob controls the probability of a wander occurring. Setting the Wander knob all the way left disables wandering. Higher values increase the probability of wandering and allow wanderings to occur more frequently.

The Stay knob controls the minimum duration of a wander. Lower Stay values allow wanders to end quickly, almost instantly. Higher values cause a wander to maintain its initial direction for longer periods, up to 5 seconds.

The R/F knob tilts the probability for selecting a random direction to the reverse (R) or forward (F) direction. When the R/F knob is fully left, all wanders will move in the Reverse direction. When the R/F knob is all the way right, all wanders will move in the Forward direction. Values in between min and max set a probability for a wander taking an R or F direction. At midpoint the probability of R or F is 50:50.

* Setting the Wander knob to maximum, the Stay knob to minimum, and the R/F knob to midpoint gives the Random-Walk direction setting that was present in previous versions of tcStretch.

* The R/F knob is useful for nudging the general direction of playback forward (or reverse) even while random wanders occur in the opposite direction. i.e. some random wandering is happening but generally the playback is making its way through the sample in the desired direction.

The **Jump** control group sets the playback position. The Begin control sets the playback position to the beginning of the active region (the left end of the waveform display), the End control sets the playback position to the end of the active region (the right end of the region), and the Random control sets playback to a random position within the active region.



The **Blur Amount** section controls the amount of Blur applied to the output. The cleanest output is produced by enabling the Pure button. (red X is disabled, green dot is enabled). Blur is best set by ear depending on the source material. In non-pure mode, Blur is produced by spectrally merging characteristics of surrounding material. The blur controls define how much surrounding material is merged together.



The **Pitch** control group controls the pitch shift amount and allows you to mix +/- one octave harmonies with the shifted material. The Pitch knob sets the amount of pitch shift to apply to the source material. The Semi button, when lit, limits pitch shift amounts to whole semitones (as 1/12 octave each).

The Octave Mixer has 3 vertical faders controlling the levels of the shifted harmonies: octave down (-12), nominal (0), and octave up (+12). The Led above each fader enables output for that pitch.

**** Careful **** if you extinguish all 3 fader LEDs it silences the output of the plugin (no outputs enabled). Not the best design .. will have to address this in a future update.



The **Appearance** control group, at the lower right corner of the GUI, has controls to enable/disable Tooltips and Readout Displays (meters). They are enabled by default.



Tips:

- Load a wav/aiff of something with lots of spectral material and good strong transients, like guitar strumming. Set playback speed to slow, direction reverse. Set transient playback speed slower than nominal playback speed. Gives a kind of bloom on the reversed crescendos.
- Add EQ, Delays, Reverbs, whatever, to post process the output of tcStretch.
- Load files with obvious transients and get a feel for how the transients interact with the playback speed (depending on the slider settings). Setting transient rate fast (near normal) adds clarity to the playback and makes the transient events more natural (not so obviously time stretched).
- Wanderings are a nice way to add some variety and unpredictability to otherwise static stretches.

- Reaper users: If the 'Preferences > Playback > Run FX when stopped' option is unchecked, then you will need to Arm the track (or route output from a live track to the track with tcStretch) to cause Reaper to treat the tcStretch track as enabled.

Bugs:

- Does not load all varieties of WAV and AIFF. It likes plain uncompressed sample formats.
- Loading large files can take a while ... I'm hoping to address that in future releases.

This is a Beta Version: Comments, questions, and suggestions welcome!

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