

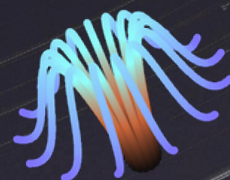
# SLOOM

EXTREME TIMESTRETCHER

VST • AU • STANDALONE

## USER MANUAL

v. 1.2



anemond

# SLOOM

user manual

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Sloom is a VST/AU plug-in and standalone application for timestretching sounds to extreme lengths. Timestretching means slowing down a sound without modifying its pitch. When the stretching factor (the amount of slowing down) is very high (in the tens, hundreds or more), the result is a slowly evolving sound texture.

In addition to a collection of timestretching algorithms, Sloom includes a spectral shaping and modulation section to further manipulate the resulting texture, and to avoid producing static sounds when extremely high stretching factors are used. It can operate on both audio files and real-time audio input.

# Installation

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## MacOS

- Double click on the downloaded .dmg file. A window will open.
- Double click on the .pkg file in the window that just opened. This will launch the installer.
- Follow the instructions on the installer. At one point, you'll have the choice of which of the four MacOS versions you want to install: VST3, AU (Effect), AU (Instrument) or standalone. You can install several of the versions at the same time:
  - The plugin versions (VST3, AU) will be installed on the system-wide folders that will be visible by your DAW.
  - The standalone version will be installed as an app in MacOS' Applications folder.

## Windows

- Uncompress the downloaded .zip file (usually by double-clicking on it or by right-clicking and selecting "Extract all")
- Double click on the uncompressed .exe file. This will launch the installer.
- Follow the instructions on the installer. It will install the following two versions:
  - The plugin versions (VST3) will be installed on the system-wide folders that will be visible by your VST-compatible DAW.
  - The standalone version will be installed as a Program with Desktop and startup menu shortcuts.

## Activation

The first time you open one of the plug-in or standalone versions, the following registration window will appear:



Enter the product key that you have received by email. You only need to register once on one of the versions. You can register up to 3 computers with a single product key.

- **Online activation:** enter your product key and click on "Send". If online activation doesn't work, please try offline activation.
- **Offline activation:**
  1. Enter your product key and click on "Save". A dialog window will appear to save a file called "SLActivationRequest.xml". Save this file to any desired location.
  2. When online, click on the link labeled "HERE" or open your browser and go to <https://anemond.net/offline-activation/>
  3. On the activation webpage, click on "Choose file" and select the file you just saved. Then click on "Activate" on the webpage. You should see an "Activated successfully" message and a link to download a file called "ActivationResponse.xml". Save this file to any desired location and go back to the Sloom registration window. Click on "Load" and select the file you just downloaded from the webpage.

## Activation troubleshooting

If something goes wrong during activation, an error message will be displayed below the activation field.

If you're getting errors trying to activate from a plugin version (VST3 or AU), open the standalone version and try activation there.

Please refer to the following table for troubleshooting depending on the error.

Error message	Action
Invalid product key	Check that the entered key is correct, and that it hasn't been copied twice.
Failed to connect to servers	Check your internet connection. If you're using a firewall or a VPN, disable them temporarily while attempting activation again. Alternatively, try offline activation.
Network adapter error	Enable all your network adapters (Ethernet, WiFi) and try again. You can disable them again after activation succeeds. If the problem persists, update your network adapters to the latest version. Alternatively, run the standalone version as an administrator (right click and "run as administrator") and try activation again.
COM setup error	Enable the Windows Management Instrumentation (WMI) service.


If the problem persists, please contact [hello@anemond.net](mailto:hello@anemond.net).

## Versions

Your copy of Sloom comes in three versions: two plug-in versions (VST3 and AU) and one standalone version:

### VST3

The VST3 version will open in any DAW host compatible with the VST3 standard, such as Cubase, Ableton Live, Reaper, Bitwig, etc. Please refer to each DAW documentation to learn how to open VST3 plug-ins. Most DAWs allow loading Sloom into either an audio or a MIDI track.

 **Ableton Live (Windows):** In the Windows version of Ableton Live, Sloom's interface might sometimes appear blurry. If this is the case, right-click on the plug-in window on the effects rack, and deactivate "Auto-Scale Plug-In Window"

## AU

Your Sloom installation includes two AU versions (Instrument and Effect) that will open in any DAW host compatible with the Audio Unit (AUv2) standard, primarily Logic Pro, but also Ableton Live, Reaper, etc. Please refer to each DAW documentation to learn how to open AUv2 plug-ins.

Each version corresponds to one of the two audio source modes possible in Sloom (see next section "Audio Source"): the AU (Effect) version implements LIVE input, and the AU (Instrument) version implements FILE input. Some AU-compatible DAWs (such as Logic Pro) only allow to use one of the modes once the plug-in has been loaded into a track. In those DAWs, you should open the AU version that corresponds to the input mode you wish to use. Other DAWs (such as Ableton Live) allow switching between both modes, and you can load either of the versions.

It is perfectly possible to open the AU (Instrument) version in a Software Instrument track, and the AU (Effect) in a separate Audio track within the same DAW session.

### AU (Instrument)

In Logic Pro, load the AU (Instrument) version if you want to use the FILE input mode (file-based playback). The AU (Instrument) version will only work correctly when loaded into a Software Instrument track (not an Audio track). In the list of AU plug-ins, Sloom will appear under the category "AU MIDI-controlled effects". On the instrument track, it will be listed in the "Instrument" box, not the "Audio FX" box. If an instrument is loaded by default when creating a new instrument track (such as "E-Piano"), click on the instrument name and replace it with Sloom.

### AU (Effect)

In Logic Pro, load the AU (Effect) version if you want to use the LIVE input mode (processing or real-time audio input). The AU (Effect) version will only work correctly when loaded into an Audio track (not a Software Instrument track). When clicking on the "Audio FX" box in the track, Sloom (Effect) will be listed under "Audio Units" -> "Anemond".

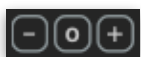
Please note that, when loaded as an AU Effect in Logic Pro, Sloom will output sound only if Logic Pro is playing.

## Standalone

The standalone version of Sloom is an independent application that can work without a DAW. Most functionalities are available in the standalone version, with two exceptions:

- Sloom's playback cannot be synchronized with the host's transport (see section on **Host Mode**).
- You cannot use parameter automation or MIDI mappings.

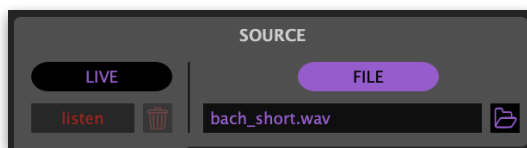
### Interface zoom in/out




The three small buttons on the top-left corner of the main window control the global size of the Factoid interface. Click on the "+" button to zoom in, on the "-" button to zoom out, and on the "o" button to reset the zoom level to the original size.

# Audio source

Sloom can process two kinds of sound input: live audio and audio files. The type of input is selected by the "LIVE" and "FILE" buttons on top of the "SOURCE" panel:

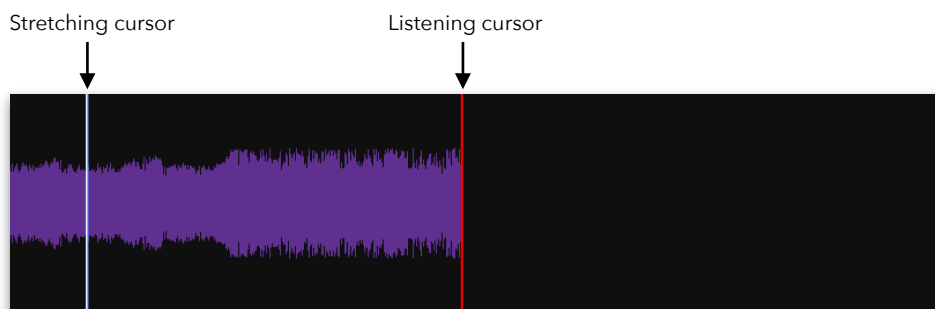


## FILE input

You can load an audio file (WAV, AIFF, MP3, FLAC) into Sloom by dragging and dropping the file from the Finder/ File Explorer or the host's file browser. Some hosts (e.g. Ableton Live) also allow to drag clips sitting on the same or other tracks. Alternatively, you can click on the load button  to open a file dialog window. The waveform for the whole file will appear in purple in the upper panel.

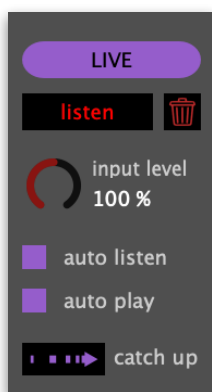
## LIVE input

In LIVE mode, Sloom works as an audio effect: it will process the audio incoming from the track it sits on. In the Standalone version, it will process the audio incoming to the "Input" device (e.g. a microphone) selected on the "Audio settings" window. Sloom listens to the incoming audio and records it. A single recording take can last up to 5 minutes. A red cursor on the waveform indicates the current listening (recording) position:



In both FILE and LIVE modes, a white stretching cursor indicates the position that is currently playing. Depending on the selected stretching factor (more on this later), it will move faster or slower.

While in LIVE mode, several additional controls are available:





- **Listen:** turn the recording on or off. The maximum recording length is 5 minutes.
- **Delete (trashcan):** delete the whole recorded input.
- **Input level:** level of the live audio input.
- **Auto listen:** when on, recording starts automatically when audio is detected at the input. This is useful when using Sloom to process audio clips sitting on a track.
- **Auto play:** when on, playback (stretching) starts automatically when audio is detected.
- **Catch up:** when stretching, the (white) stretching cursor advances more slowly than the (red) listening cursor. Clicking on the "catch up" button accelerates the stretching cursor until it reaches the current listening position. When it arrives at the listening position, the speed it had before catching up is restored. Catching up is only possible during playback.

## Transport panel

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The transport panel controls playback. The current playback position is indicated by the (white) stretching cursor. With high stretching factors, the stretching cursor will move extremely slowly.

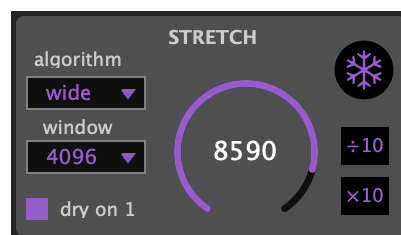


- **Rewind:**  If a region selection is active on the waveform, this jumps to the beginning of the selection. If not, it jumps to the beginning of the loaded file or recorded live input.
- **Reverse:**  When the reverse button is active, the signal is reversed and playback happens from right to left.
- **Loop:** If a region selection is active on the waveform, this will make the stretched playback loop within the selection. If not, it will loop around the whole length of the input.
- **Host:** **(disabled in the standalone version)** In "host" mode, Sloom's main play button is disabled and playback will be controlled by the host DAW's transport.

## Stretch panel

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The stretch panel is Sloom's main control section. It determines the amount of timestretching applied to the sound, as well as the main stretching parameters.



### Stretch dial

The amount of time stretching is controlled by the large stretch dial. The default value is 10. The minimum is a factor of 1, which means that the sound plays back at the original speed.


The ×10 and ÷10 buttons at the right control the range of the stretch dial. The default range of the dial is 1 to 100. Clicking once on the ×10 button will expand the dial to a range between 1 and 1000, clicking twice to a range between 1 and 10000, and so on. How far can you go? It's up to you to find out!

It is important to note that the ×10 button increases the range of the dial, but it does not change the stretching factor. Once the range has been expanded, the dial needs to be moved in order for the factor to change.

On the other hand, when reducing the range with the ÷10 button, the situation is different. If the current position of the dial is larger than the maximum range that would result after clicking ÷10, then the stretching factor **does** instantly change when clicking the button. For example, if the current value of the dial is 500 and you click on ÷10, the stretching factor instantly changes to 100, which is the new maximum value. However if the value was 90 before clicking, the factor won't change.

Once a stretch factor has been selected, and depending on the length of the input audio and the current position of the stretching cursor, the info window at the top of the interface indicates the time from start of the sound (or of the current selection), the time remaining until reaching the end, and the expected date and time the sound will end (or the end of the loop will be reached):

time from start	time remaining	ends on
18m 7s	1h 12m 59s	June 12, 2024, 10:57 PM

 When using Sloom with very high stretching factors (e.g. hours for an event or days for an art installation), don't forget to make sure your computer won't enter sleep mode or battery-saving mode, potentially turning off audio!

## Algorithms

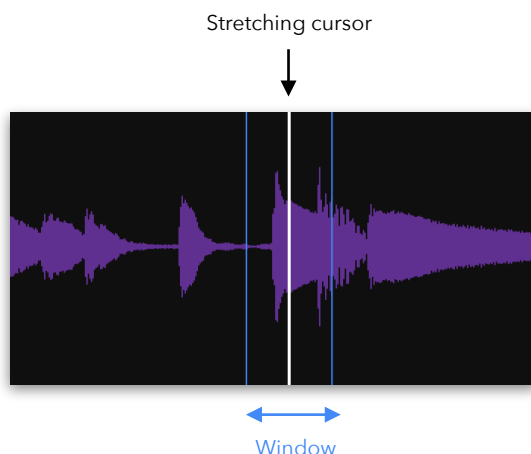
The following timestretching algorithms are available and can be selected from the algorithm menu:

- **Wide:** It produces a sound with a wider stereo field than the original, even when applied to mono sounds. This is the default algorithm.
- **Narrow:** The resulting stereo field is narrower than the "wide" algorithm. Mono sounds stay mono.
- **Rough:** Produces a rougher sound containing pitch artifacts and beatings. In contrast with the "wide" and "narrow" algorithms, the overall timbre depends a lot on the time stretching factor and the window size. Works best for stretching factors up to 1000. For stretching factors higher than 1000, it switches to the "wide" algorithm.
- **Robotic:** Produces a single-pitched synthetic, lo-fi, sound, with the pitch determined by the window size. Works best for factors up to 100. For stretching factors higher than 100, it switches to the "wide" algorithm.
- **Hybrid:** Produces a sound somewhere between the "robotic" and the "wide" algorithm.

## Window

The window dropdown menu lets you select the size of the analysis window, in powers of two from 512 to 32768. It is the number of samples that are observed to compute each one of the spectral frames displayed on the spectrum panel. Higher values mean a higher frequency resolution (cleaner spectral peaks) but lower time resolution (for very high values the playback cursor will move in steps rather than smoothly).

The size of the currently selected window is shown by two blue lines to each side of the stretching cursor:



The window size impacts the sound in two ways:

- It represents the “area of influence”: the chunk of the input signal that is observed to compute the current spectrum. For example, in the above image, the window is centered on a note but it’s starting to capture the onset of the next note. The stretched sound at this moment will be a mixture of the main note with a slight hint of the next note. If you choose a shorter window, the “pre-echo” produced by the onset will happen later.
- Depending on the algorithm, it will also have a big influence on timbre. In “robotic”, “rough” and “hybrid”, it determines the pitch of the artifacts. For “wide” and “narrow”, short windows sound more and more noisy or whisper-like.

### Freeze button

The freeze button halts the position of the playback cursor (in other words, it corresponds to an infinite stretch factor). The spectrum of the output sound will be fixed, but you can still modify it with the spectral modulation and shaping controls (see below).

When freezing from the “rough” or “robotic” algorithms, the algorithm changes to “wide” while freezing. When freezing from the “wide”, “narrow” or “hybrid” algorithms, the algorithm remains unchanged.

### Dry on 1

When this option is activated, the playback sound will be the exact original when the stretch factor is 1. When off, the sound will contain artifacts associated with the current algorithm, even if playing at the original speed.

## Spectral shaping

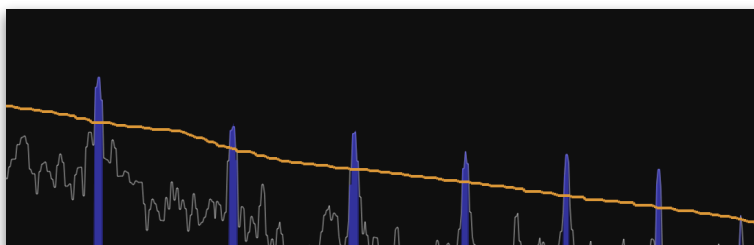
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For very high stretching factors, the output sound can quickly become quite static. To avoid this, and allow keeping extremely timestretched clips sound expressive and lively, two powerful spectral modification tools are available in Sloom.


The first is a spectral shaping panel, controlling a “spectral shaper” which is displayed as an orange line over the spectrum panel in the lower part of the interface. This spectral shaper can take several forms, each of which will have a different influence on the sound.

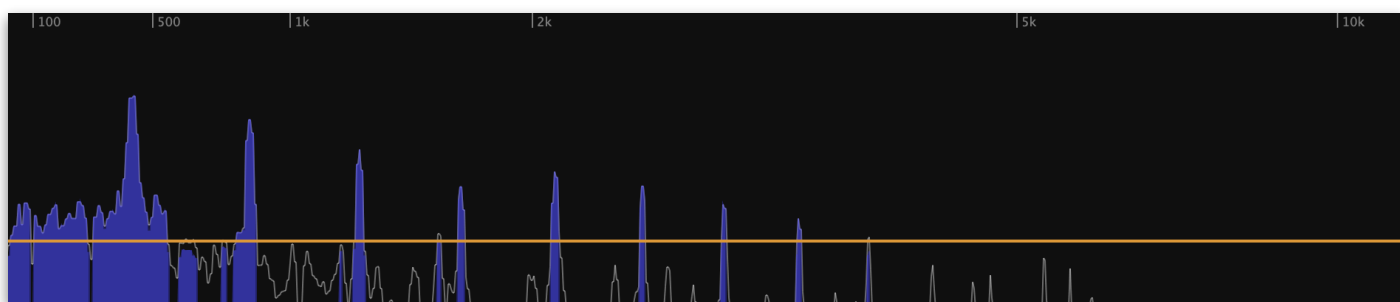
The crucial point to keep in mind is that the spectral shaper should be understood as a **threshold**: all spectral peaks that are higher than the shaper will pass, and everything that lies below is cut. The spectral contents that makes it pass the threshold is displayed in blue:





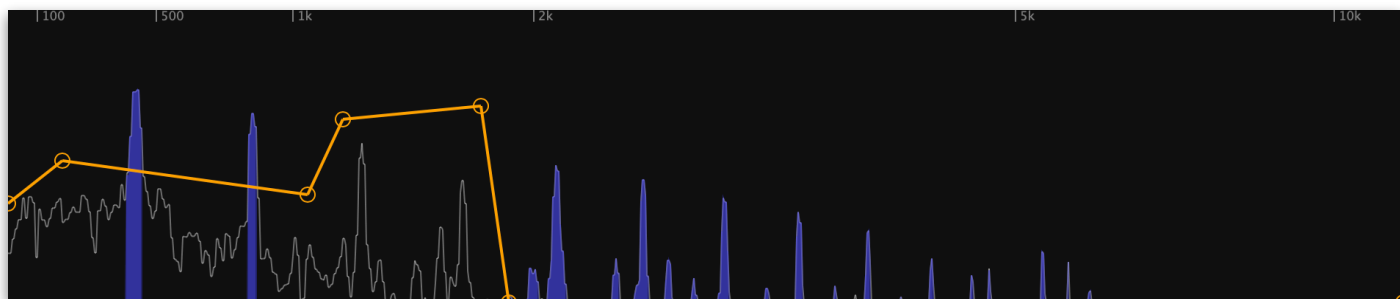
In the above example, a shaper has been drawn that cuts through the peaks of the harmonics. The resulting sound contains only the harmonics, and the noise floor has been filtered. In this sense, it works the opposite way than a filter: in contrast with a filter's frequency response, the lower the threshold line is, the more portions of spectrum will pass. It allows to easily extract harmonics, partials, separate noisy from tonal parts, etc.



The blue slider to the right of the spectral shaping panel controls the vertical position of the shaper as a whole. The buttons control its shape:

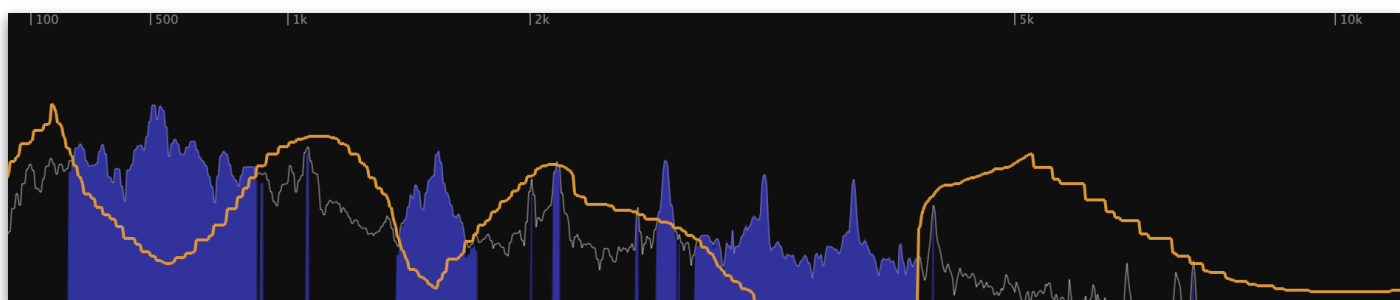
-  **Flat shaper:** The shaper is a flat line with its vertical position controlled by the blue slider. Since spectra have usually higher energy at lower frequencies, sliding a flat shaper from top to bottom will often produce a sound that starts with an overall dark timbre that gets brighter and brighter.



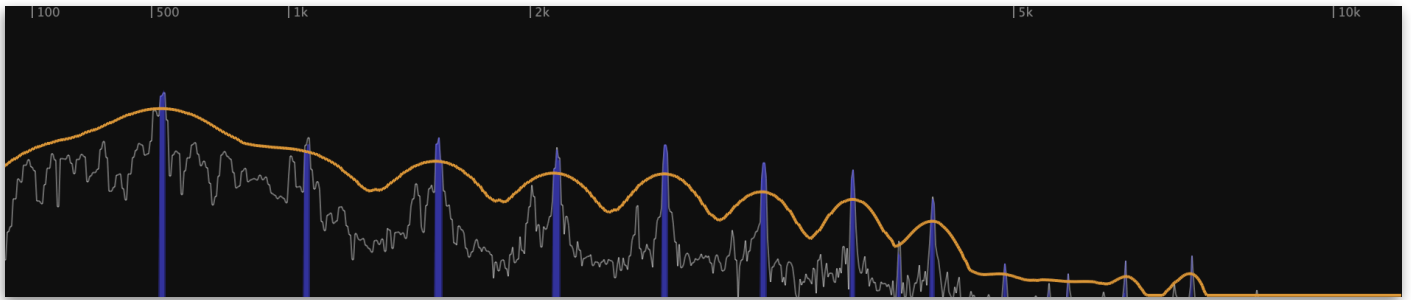
-  **Linear shaper:** The shaper is piecewise linear, defined by a series of vertices that can be freely added and moved around. Clicking once somewhere on the shaper adds a vertex, double-clicking on an existing vertex removes it. Clicking on the reset button  erases all the vertices and goes back to a flat line.



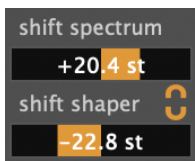
-  **Free shaper:** Allows drawing a freehand line to select precise areas of the spectrum. Clicking on the reset button  goes back to a flat line.



- **ENV Envelope shaper:** Creates a shaper that adapts to the contours of the current spectrum. This is useful for separation tonal/sinusoidal from noisy parts of the overall timbre. As all other shaper, its vertical position can be controlled by the blue position slider.





## Pitch shifting



The two horizontal sliders at the bottom of the spectral shaping panel move both the spectrum and the spectral shape in frequency. To change the values on either slider you can:

- Click on the slider and drag the mouse vertically
- Single click on the slider, and enter the desired value with the keyboard
- Double clicking on the slider resets the values to 0.0

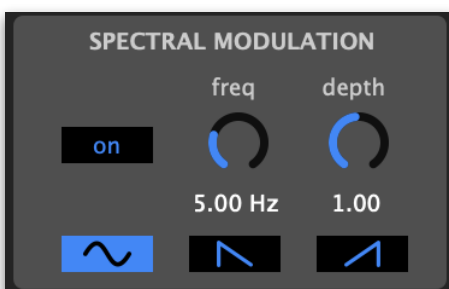
- **Shift spectrum:** Shifts the pitch of the spectrum up (towards the right in frequency) or down (towards the left). The amount of shifting is given in semitones.
- **Shift shaper:** Shifts the spectral shaper upwards or downwards in frequency.
- **Link/unlink:** The link button controls if the spectrum and the shaper are pitch-shifted together (linked: ) or independently (unlinked: )




## Spectral modulation

In combination with spectral shaping, spectral modulation allows further dynamic modifications of the stretched or frozen sounds. What is modulated is the vertical position of the spectral shaper that is currently active (see previous section). To understand how the modulation panel will modify the sound, think of the spectral shaper line moving up and down with an amplitude and frequency given by the modulation controls. Therefore, besides the controls on the modulation panel, the position and form of the shaper will have an impact on how the modulation sounds.

If no spectral shaper is currently active, the modulation acts on an (invisible) flat shaper located at half height.

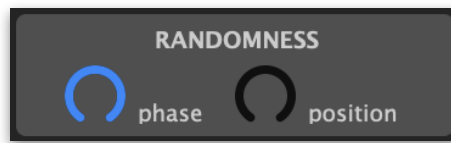
The controls on the modulation panel are the following:



- **On:** turn spectral modulation on/off
- **Frequency** of the spectral modulation, from 0.01 Hz to 20 Hz.
- **Depth** (amplitude) of the spectral modulation
- **Shape** of the spectral modulation:
  -  sinusoidal
  -  decreasing sawtooth
  -  increasing sawtooth

## Randomness panel

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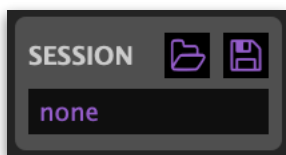


Besides modifying the spectral shape with the shaping and modulation panels, a further degree of control can be obtained by controlling the degree of randomness that the stretching algorithms use:

- **Phase** randomness: A key component of the “wide” and “narrow” algorithms is the introduction of random phase shifts to the spectrum. This setting controls the amount of randomness introduced: the lower the amount, the more “synthetic” the sound will sound. This setting has no effect for the “robotic”, “rough” or “hybrid” algorithms.
- **Position** randomness: This setting adds some degree of randomness to the position of the stretching cursor, even when freezing. With moderate values, the cursor will wiggle around its position, producing variation on the output spectrum. With larger values, the cursor will struggle to advance and might even go backwards, performing a kind of random walk across the timeline.

## Session panel

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The session panel allows to save and restore your Sloom sessions. Sessions will be stored in files with the extension `.sloom`.

Alternatively, if using one of the plug-in versions with a DAW, you can also use that DAW's integrated preset system to save and restore sessions (please consult the specific DAW documentation on saving and loading presets).

When saving a session in LIVE mode, the recorded audio will be saved as a WAV file with the same name and in the same folder as the session. When loading a session with recorded input, the corresponding WAV file needs to be in the same folder than the `.sloom` file.

## Audio export

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To export the stretched audio as a WAV file, click the Export button to the right of the Sloom logo. A dialog window will appear with a default file name based on the current time, such as `SLOOM_05_11_25_22_20_00.wav`. You can change this default name before saving.

If a region is selected on the waveform, only that region will be exported. If no selection is active, Sloom will export the entire file (when using file input) or the full recording buffer up to the listening cursor. If the Freeze button is enabled during export, a one-minute WAV file of the frozen sound will be generated.

The maximum allowed export length is 2 hours, which, for stereo audio at 16-bit / 44.1 kHz, results in a WAV file of approximately 1.2 GB. If you exceed this 2-hour limit, reduce the stretch factor or shorten the waveform selection before exporting.

# Parameter automation and MIDI mapping

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When using Sloom as a VST or AU plug-in, all buttons on the interface are visible as parameters to the host DAW, allowing parameter automation and control via MIDI hardware.

## Parameter automation

Each DAW has a different way of displaying and handling parameter automation. Some DAWs, such as Ableton Live, require an interface button or slider to be clicked in order for the corresponding parameter curve to appear on the automation track. Please consult your DAW documentation.

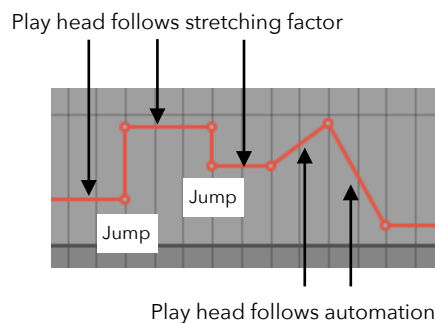
## MIDI mapping

You can manually assign each button or slider on Sloom's interface to an external MIDI controller by using your DAW's MIDI mapping capabilities. The mapping process typically involves clicking a button or slider on Sloom's interface and then pushing or moving the button, potentiometer or fader you wish to assign it to on the hardware controller. Please consult your DAW documentation.

## Play head position automation and MIDI mapping

Besides all interface graphical controls, the position of the stretching cursor is also accessible from the DAW as parameter "Play Head Position". It accepts both automation and MIDI mapping. The range of the "Play Head Position" is 0 to 1, 0 meaning the start and 1 meaning the end of the loaded file or current live input buffer.

Sudden changes in the automation curve correspond to jumps in the play head position. In sections where the automation curve is constant, the stretching cursor keeps progressing according to its current stretching factor. In sections where the automation curve has a slope, the stretching cursor ignores the stretching factor and follows the automation curve.



# Support

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For assistance, bug reports and any suggestions, please contact [hello@anemond.net](mailto:hello@anemond.net)

If you're having issues with product activation, please consult the "activation troubleshooting" table in the "Installation" section of this manual.

If you're sending in a bug report, please include the following information:

- Your Sloom version
- Your OS version
- Your DAW version

- If possible, the audio clip that produced the issue
- If possible, a screen recording of the actions that produced the issue