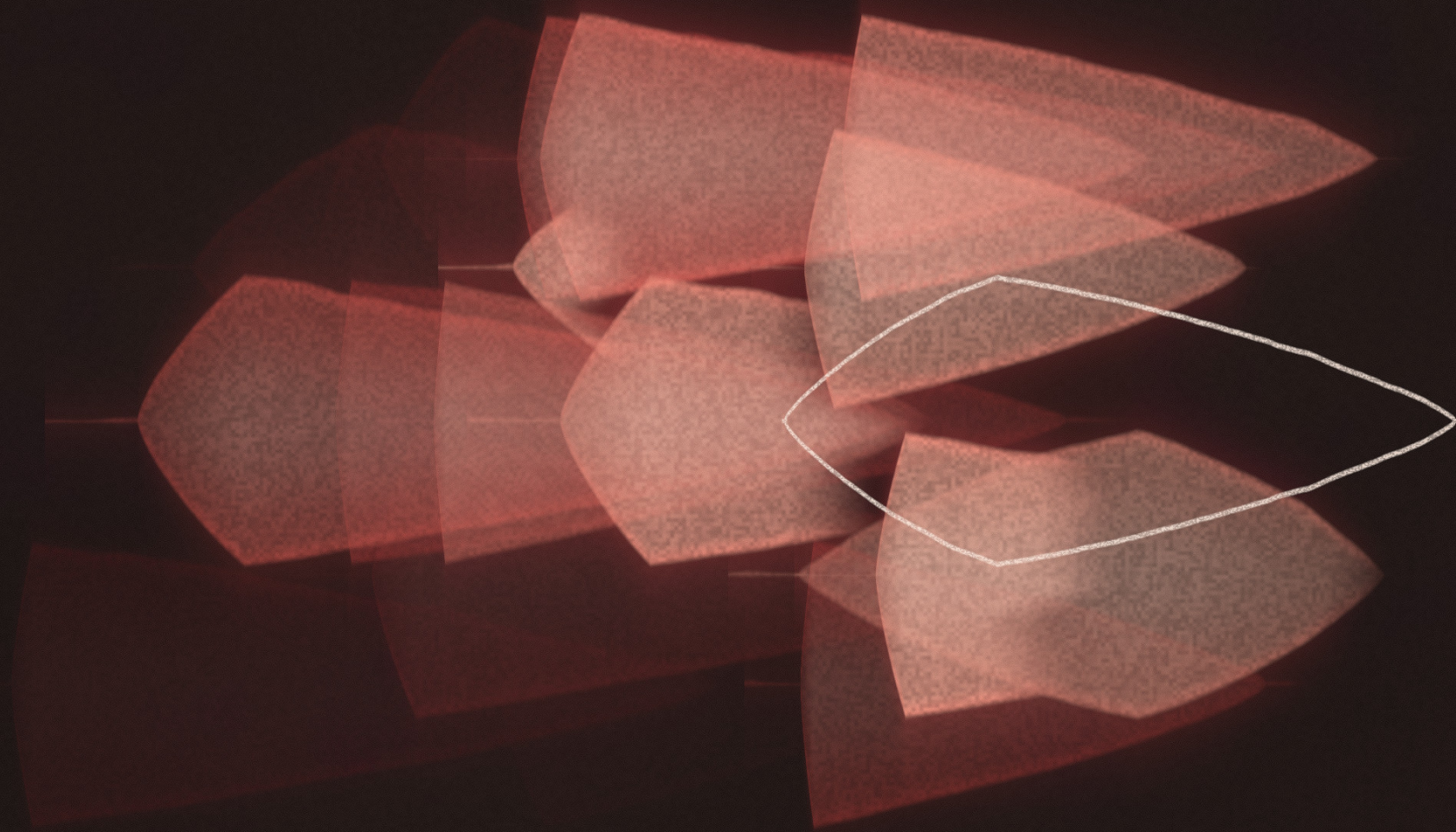




A T T I M O

TEXTURE
SYNTHESIZER
A REIMAGINING OF
ÉMILIE GILLET'S BEADS

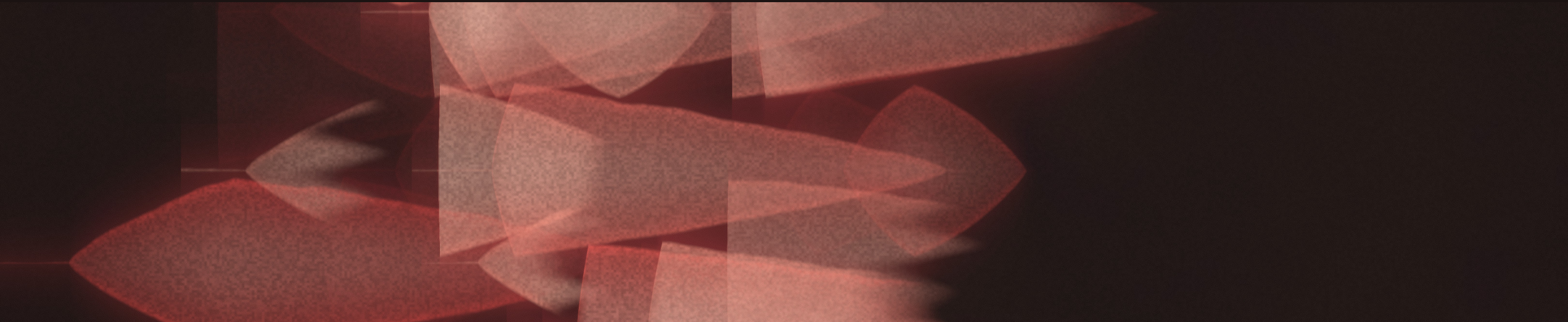
Reimagining Émilie Gillet’s Beads meant more than a fresh interface: three original modes complete the idea of a texture synthesizer.

The project began with these three modes, *Stretto*, *Canon* and *Rubato*, as an effect plugin that was never released. When Émilie Gillet open-sourced Beads, we took the opportunity to bring them together with her engine, reproduced sample for sample, and make ATTIMO the ultimate granular playground.

ATTIMO continuously records its input into a buffer of 4 to 16 seconds, depending on the medium: the memory. The window shows what is played from it in real time, from past (left) to now (right) and from low to high; the outline shows the current settings.

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1

INSTALLATION

- 1 Right-click `INSTALL.command` and choose Open.
- 2 macOS refuses to open it, because this build is not signed with an Apple developer certificate. Click Done, not Move to Trash.
- 3 In System Settings, Privacy & Security (macOS 12 and earlier: System Preferences, Security & Privacy, General), click Open Anyway next to “INSTALL.command” was blocked.
- 4 Terminal copies the plugins into `~/Library/Audio/Plug-Ins`.
- 5 Restart your host and rescan. ATTIMO is listed under Laboratory 0.

Steps 1 to 3 are needed only once.

REQUIREMENTS

macOS 10.15 or later, Apple silicon or Intel. An AU or VST3 host.

MANUAL INSTALLATION

Copy the plugins into the Components and VST3 folders in `~/Library/Audio/Plug-Ins`, then run in Terminal:

```
xattr -cr ~/Library/Audio/Plug-Ins/*/ATTIMO.*
```

UNINSTALLING

Delete `ATTIMO.component` and `ATTIMO.vst3`.

2

INTERFACE

- 1

HEADER

Memory length, *Clear*, *Mode*, *Medium* and *Freeze*. Click a value to change it.
- 2

PAINTING

Playback in real time: time from left to right, pitch from bottom to top. Click to trigger a grain (in the other modes, the mode’s own action).
- 3

OUTLINE

The current settings. Drag it to set *Position* and *Pitch*; drag its right end to set *Size*.
- 4

HELP LINE

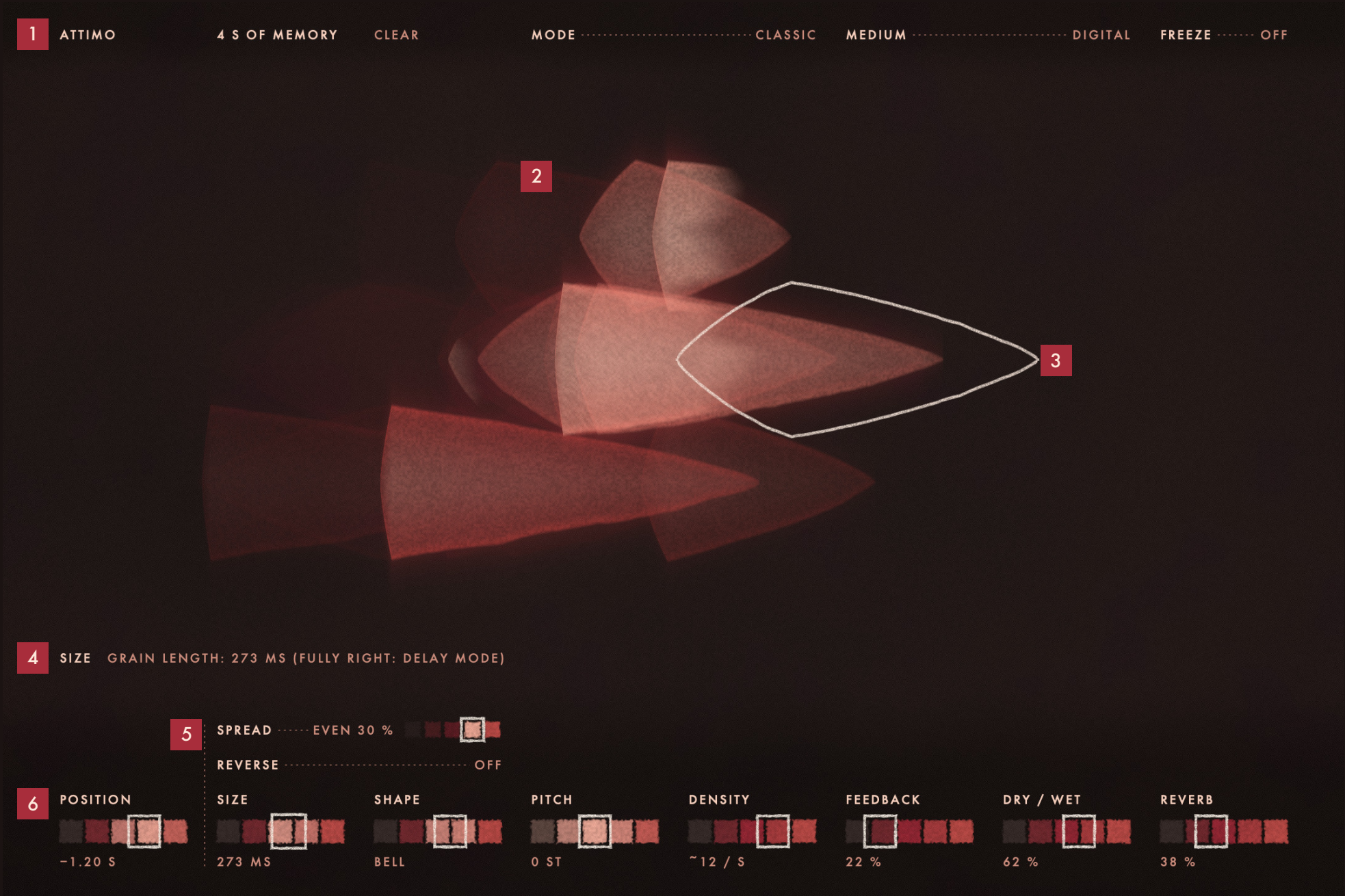
Describes the item under the pointer.
- 5

SETTINGS

Additional settings of a control. Click its name to show or hide them.
- 6

CONTROLS

Drag along the squares; hold Shift for fine adjustment. Double-click to reset.



The window in *Classic*, with the *Size* settings open. Drop an audio file on it to load it (page 9); drag its corner to resize it, from 900 to 1800 points wide.

3

GRAIN PARAMETERS

POSITION

Where in the memory grains are taken from, measured back from now (the right end). -1.20 s means 1.2 seconds ago.

SPREAD

Randomizes the position of each grain. **Even** (right of centre): every grain varies by up to the set amount. **Uneven** (left of centre): the amount of variation itself is random for each grain.

SIZE

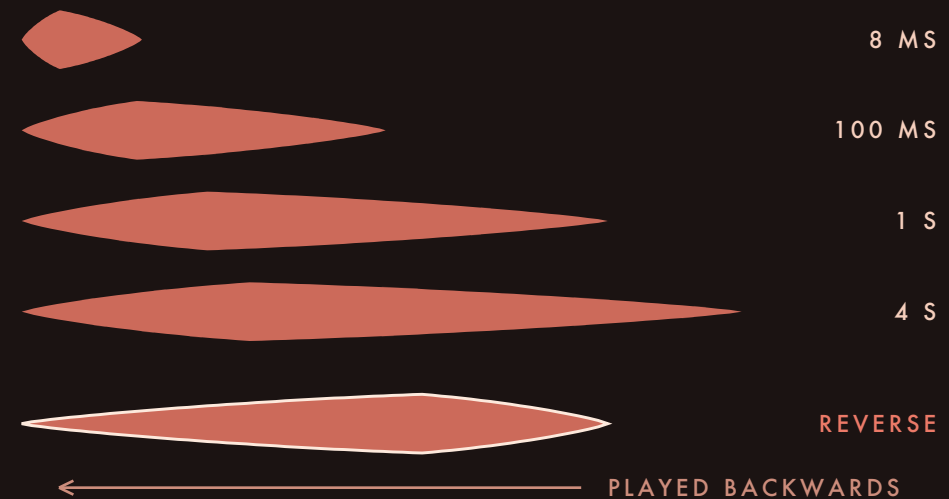
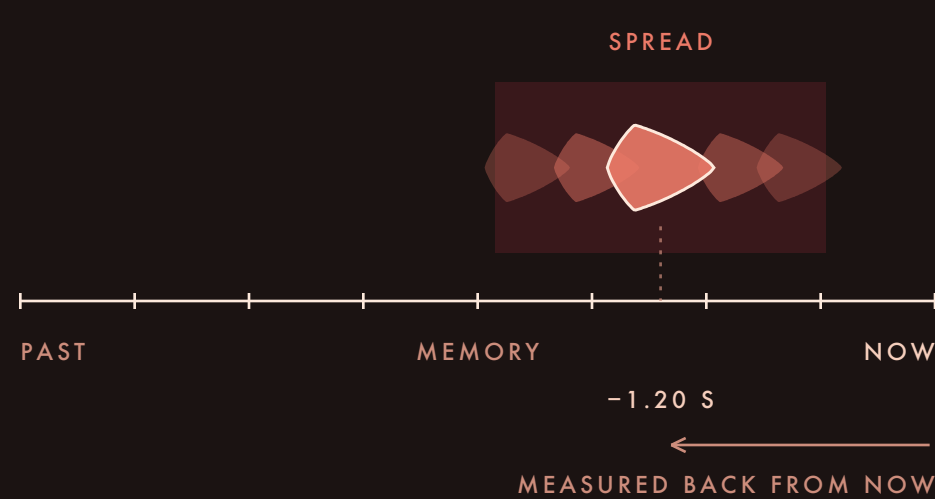
Grain length, from 8 ms to 4 s. At the right end, ATTIMO switches to delay mode (page 7).

REVERSE

Plays grains backwards.

SPREAD

Randomizes the length of each grain.



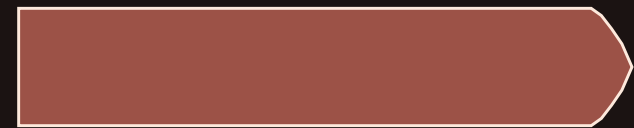
Position, Size, Shape and Pitch define the grain; the outline in the window shows them.

SHAPE

The grain envelope, from **Block** to **Swell**.

SPREAD

Randomizes the envelope of each grain.



BLOCK
SHAPE 2 %



DECAY
SHAPE 25 %



BELL
SHAPE 62 %



SWELL
SHAPE 97 %

PITCH

Transposition, up to 24 semitones up or down, with detents at 0, 1, 3, 4, 7, 12 and 24.

SPREAD

Transposes each grain by a random amount, up to 24 semitones up or down.

SCALE

Quantizes the random transpositions.
Off: continuous, as on the module.
Octaves; Fifths: fifths and octaves.
In key and Pentatonic: ATTIMO detects the key of the memory and transposes each grain so that its own notes stay in that key, or in its pentatonic scale; the help line shows the detected key. Unpitched material falls back to fifths and octaves.

NOTES

Selects how MIDI notes play (page 10).

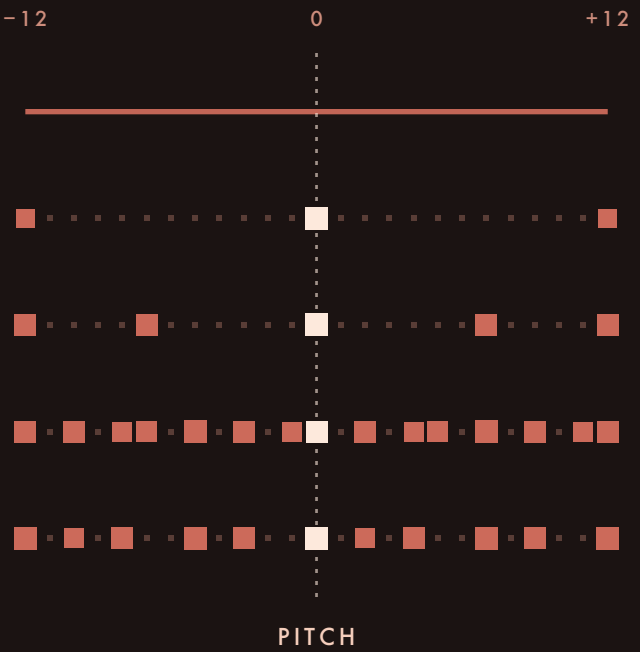
OFF

OCTAVES

FIFTHS

IN KEY

PENTATONIC



SEMITONES FROM THE PITCH, REPEATED IN THE NEXT OCTAVE; LARGER SQUARES ARE MORE LIKELY. IN KEY AND PENTATONIC: SHOWN FOR A GRAIN ON THE ROOT OF THE KEY

4

DENSITY AND DELAY

DENSITY

Grains per second, from none to about 130. At **None**, grains are triggered only by clicks on the painting and by MIDI notes.

ORDER

Regular spaces grains evenly; **Random** spaces them at random, at about half the rate.

SYNC

Locks grains to the host tempo, on a grid from 1/1 to 1/32. With **Regular**, **Density** sets the interval in steps (1 to 16); with **Random**, the probability of each step.

REGULAR



RANDOM



SYNC 1/16
EVERY 2ND STEP



TIME

DELAY MODE

With **Size** at its right end, ATTIMO becomes a delay. **Density** sets the delay time, from the full memory length at **None** down to a few milliseconds; **Position** multiplies it by 1 to 16, **Shape** sets the envelope of each repeat, and **Feedback** the number of repeats.

With **Freeze** on, the delay loops a slice of the memory, selected by **Position**.

DELAY MODE



DENSITY
DELAY TIME

FEEDBACK
NUMBER OF REPEATS

5

FEEDBACK
AND OUTPUT

FEEDBACK

Records the grain output back into the memory, mixed with the input. All media except **Digital** saturate and darken it.

REWRITE

While frozen, feedback gradually rewrites the frozen memory. Turn it off to keep the memory unchanged.

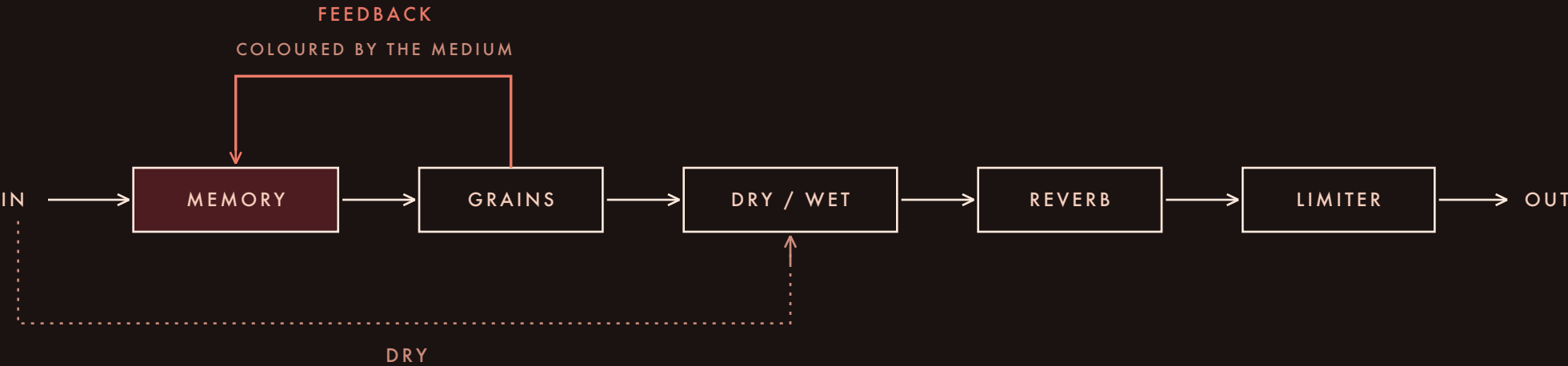
DRY / WET

Balance between input and grains.

REVERB

Applied to the whole output, dry and wet: longer and wetter as it is turned up, darker on the tape and vintage media.

An output limiter prevents clipping.



6

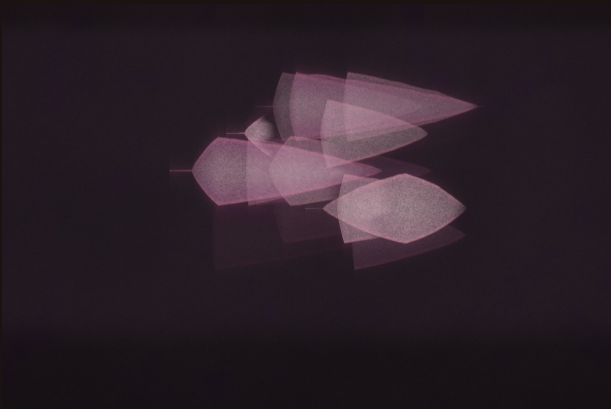
MEMORY

MEDIUM

Sets the bit depth and sample rate of the memory, and with them its length and character. Switching media converts the memory’s content; playback pauses briefly. With **Freeze** on, each switch starts again from the frozen content.

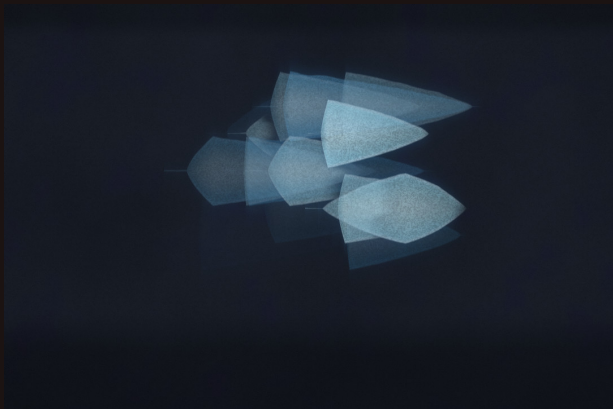
IN THE OTHER MODES

Stretto, **Canon** and **Rubato** play from the same memory. Their output also passes through the medium: resampled to its rate and bit depth, with wow and flutter on dirty tape.



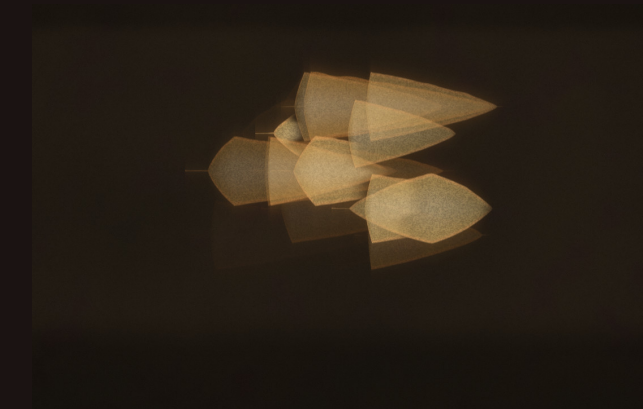
DIRTY TAPE

8-bit μ -law, 24 kHz · 16 s of memory
Wow and flutter; input, memory and feedback crushed.



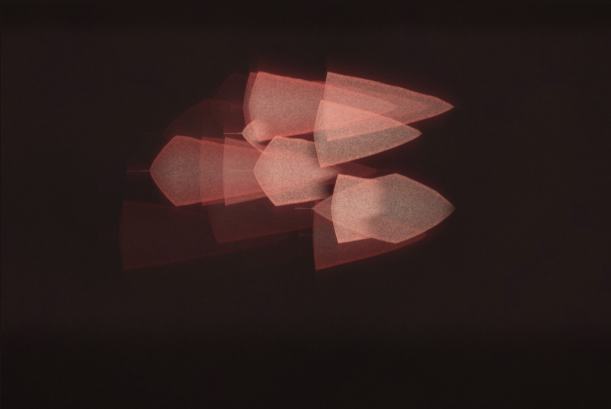
CLEAN TAPE

12-bit, 24 kHz · 10.7 s of memory
Soft saturation; clean dry signal.



VINTAGE DIGITAL

12-bit, 32 kHz · 8 s of memory
Grainy 12 bits, dry signal included.



DIGITAL

16-bit, 48 kHz · 4 s of memory
Clean and full range.

FREEZE

Stops recording. A frozen memory is saved with the project.

CLEAR

Erases the memory. With **Freeze** on, it stays empty until **Freeze** is turned off.

LOADING AUDIO FILES

Drop an audio file on the window. ATTIMO loads up to 16 seconds, loops shorter files to fill the memory and turns **Freeze** on. The file is kept through **Medium** changes until **Freeze** is turned off.

7

MIDI NOTES

GRAINS

Each note triggers one grain at its pitch; note 60 plays at the **Pitch** setting. Velocity sets the level.

TONE

A held note plays the memory as a tone: one grain per cycle of the note’s frequency, 1 to 4 cycles long (**Size**), all reading from the moment the note began. **Pitch** changes the timbre, not the note.

One note sounds at a time; on release, the previously held note resumes.

Notes, in the **Pitch** settings, selects the mode. MIDI notes are used in **Classic** only.

In Ableton Live, route a MIDI track to ATTIMO with its MIDI To menu.

GRAINS



ONE GRAIN PER NOTE, AT ITS PITCH

TONE



— ONE CYCLE

A GRAIN ON EVERY CYCLE OF THE NOTE

8

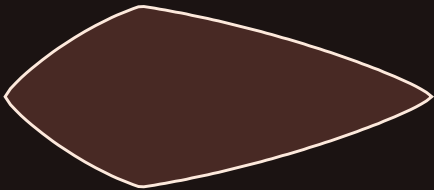
MODES

MODE

Mode, in the header, selects the playback engine. **Classic** is the original Beads granular engine (sections 3 to 7). **Stretto**, **Canon** and **Rubato** are three streamlined engines designed by Laboratory 0 to give musical results straight away. All four play from the same memory, so **Freeze**, **Clear** and loaded files apply in every mode.

CONTROLS IN EACH MODE

All modes share the eight controls of the band. Each mode maps them to its own parameters over their full range (pages 12 to 14); the outline and the painting change with the mode. **Feedback** records the mode's output back into the memory (not while frozen), **Dry/Wet** sets the balance with the input, and **Reverb** applies to the mode's output.



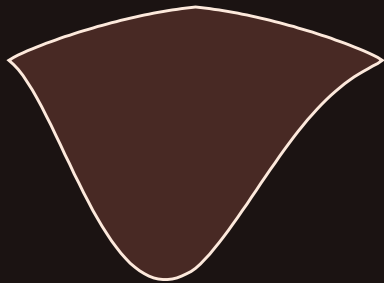
CLASSIC
ONE GRAIN: POSITION, LENGTH,
PITCH AND ENVELOPE



STRETTO
THE STUTTER RATE OVER THE
LENGTH OF A STRETTO



CANON
GRAINS ACROSS THE SOURCE WINDOW;
RAISED ONES ARE TRANSPOSED

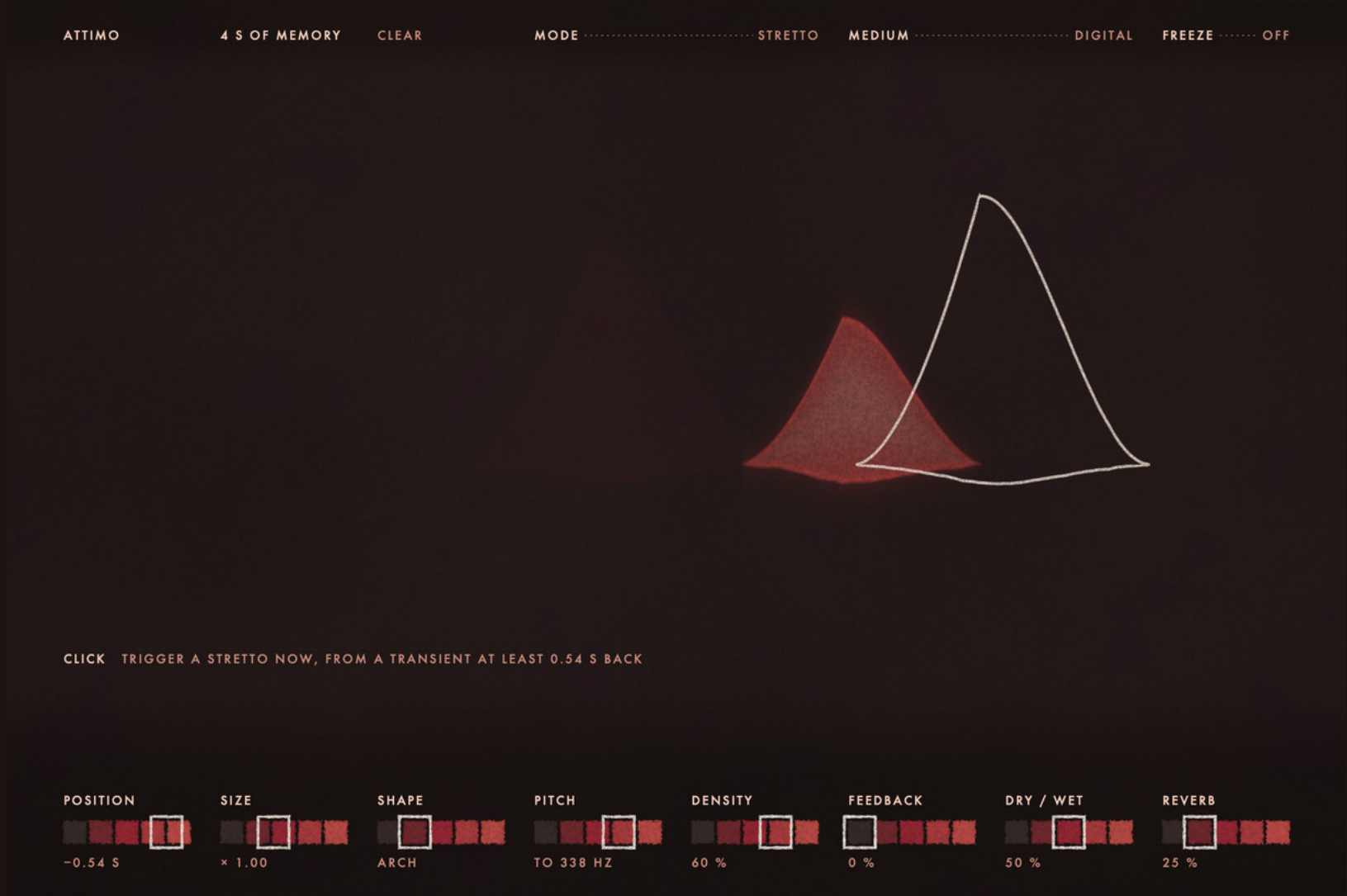


RUBATO
THE PLAYHEAD SLOWDOWN AT
A TRANSIENT: REACH AND DEPTH

STRETTO

Each transient in the memory triggers a stretto: a stutter on the transient whose rate accelerates into the audio range, where the repeats fuse into a pitched tone, and then slows down.

The outline traces the stutter rate over the stretto: its height is the top rate (Pitch), its width the duration (Size). Drag it to set Position and Pitch; drag its right end to set Size. Click the painting to trigger a stretto immediately.



POSITION

Source transient: the most recent one, or one at least up to 4.5 s back.

SIZE

Duration of each stretto: 1/4× to 4× its base length.

SHAPE

Rate envelope: Fall, Arch, Varied (different each time), Twice or Climb.

PITCH

Top stutter rate, heard as the pitch of the tone: 190 to 400 Hz.

DENSITY

How often a transient triggers a stretto; lower settings give fewer, longer ones.

Feedback, Dry/Wet and Reverb: page 11.

CANON

Grains taken at random from a window of recent memory enter again, some transposed an octave up or down or a fifth up, like voices in a canon. Their level and rate rise and fall in a cycle locked to the host tempo.

Each outline is a grain, placed across the source window; raised ones are transposed. Drag them to set **Position** and **Pitch**; drag the first one's right end to set **Size**. Click the painting to restart the cycle with a burst of grains, panned by the click position.



POSITION

Source window, 3.2 s long: from 0.15 s back up to 6.85 s back.

SIZE

Cycle length, 1/8 bar to 2 bars; grain length follows.

SHAPE

Cycle depth: how far level and rate dip.

PITCH

Share of grains transposed an octave or a fifth: 0 to 84 %.

DENSITY

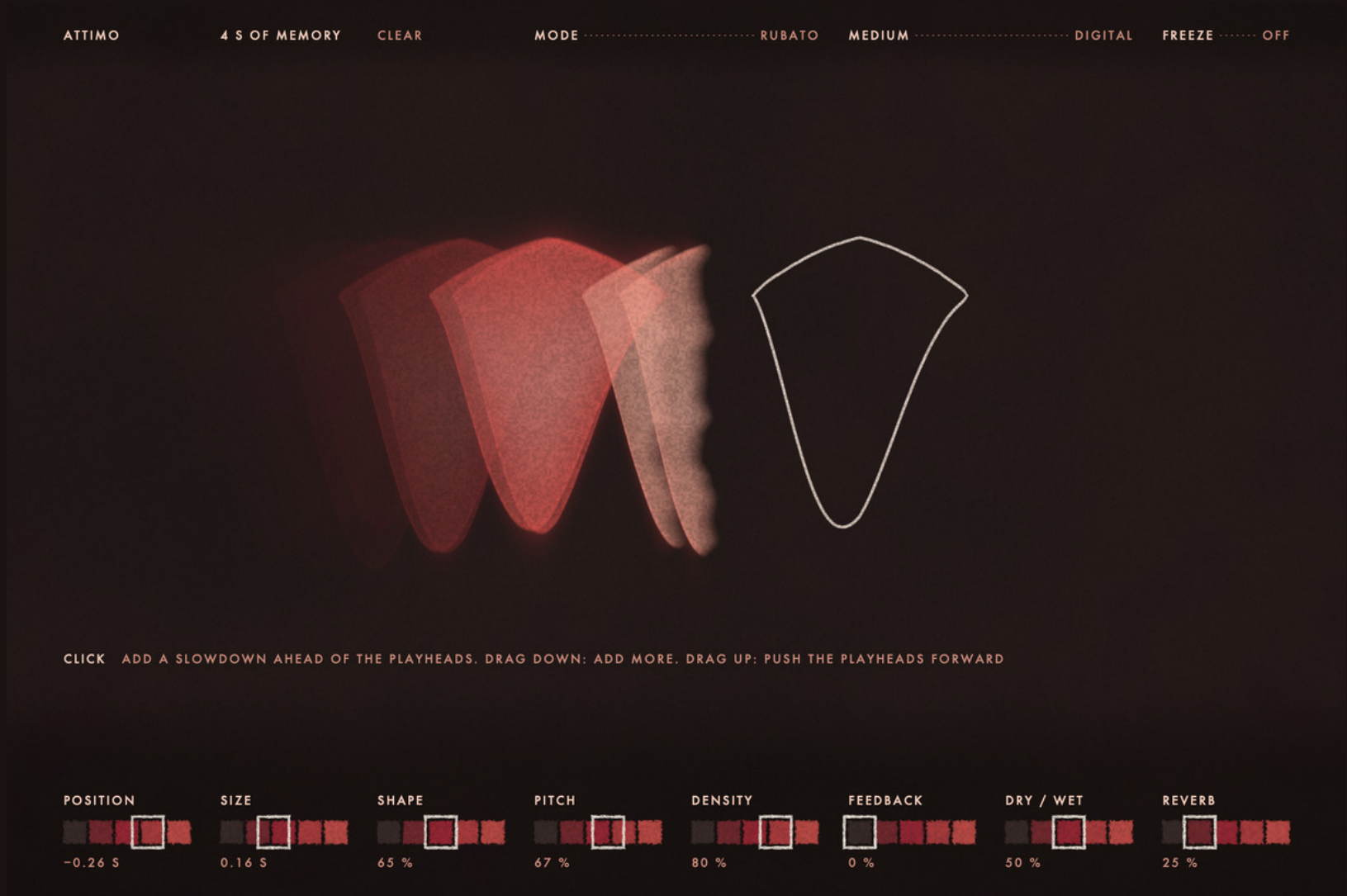
Grain rate.

Feedback, Dry/Wet and Reverb: page 11.

RUBATO

Two varispeed playheads, left and right, play the memory at a set delay. Approaching a transient, each slows down, lowering the pitch; past it, it speeds up and returns to its resting delay. Left and right respond differently, which widens the stereo image.

The outline shows the slowdown: its width is the reach, its depth the amount, its point the return speed. Drag it to set Position and Pitch (down is deeper); drag its right end to set Size. Click the painting to add a slowdown ahead of the playheads; drag down to add more, up to push them forward.



POSITION

Resting delay of the playheads: 0.09 to 2.9 s.

SIZE

Reach: how long before a transient the slowdown begins, 0.05 to 0.45 s.

SHAPE

Return speed to the resting delay.

PITCH

Slowdown depth, from slight to almost stopped.

DENSITY

Share of transients that slow the playheads.

Feedback, Dry/Wet and Reverb: page 11.

9

PARAMETERS

Names and ranges as shown in the host. In *Stretto*, *Canon* and *Rubato*, the same parameters are mapped as described in section 8.

Latency: about 11 ms, constant across modes and media, reported to the host.

PARAMETER	RANGE	
POSITION	0 – 100 %	how far back the grains come from; 0 is now
SIZE	0 – 100 %	below 33 % the grains play backwards, longest at 0; above, forwards, longest near 100; 100 % is the delay
SHAPE	0 – 100 %	block, decay, bell, swell from 0 to 100
PITCH	–24 – +24 st	
SPREAD	Uneven 100 % – Off – Even 100 %	one each for Position, Size, Shape and Pitch. Even: every grain varies by up to the set amount; Uneven: the amount varies per grain
DENSITY	0 – 100 %	0 is none
ORDER	Regular, Random	
SYNC	Free, 1/1 ... 1/32	
FEEDBACK, DRY/WET, REVERB	0 – 100 %	
FREEZE, REWRITE	Off, On	
MEDIUM	Dirty tape, Clean tape, Vintage digital, Digital	
MODE	Classic, Stretto, Canon, Rubato	
NOTES	Grains, Tone	
SCALE	Off, Octaves, Fifths, In key, Pentatonic	Octaves by default; In key and Pentatonic follow the key detected in the memory

10

CREDITS

The **Classic** engine is Émilie Gillet’s.

Émilie Gillet designed Beads, a granular texture synthesizer module, and in October 2026 published its firmware under the MIT license. Her code runs in ATTIMO unmodified: in **Classic**, with Laboratory 0’s additions disabled, the output is identical to it, sample for sample, at 48 kHz.

Laboratory 0 added the painted interface, MIDI note input in two modes, tempo sync, key-aware pitch scales, rewriting of frozen memory and audio file loading.

Thank you, Émilie.

Visual design inspired by Paul Klee’s polyphonic paintings: Fuge in Rot (1921), Alter Klang (1925), Polyphonie (1932).

CLASSIC ENGINE (BEADS)
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