

The background of the image is a dark gray or black color. It features several faint, glowing white lines that form complex, swirling patterns known as Lissajous figures. These figures are more concentrated in the center and right side of the frame, appearing as delicate, translucent shapes against the dark background.

L I S S A J O U S

Lissajous is a complex audio-video signal generator built in Max/MSP and inspired by the work of Jules Antoine Lissajous.

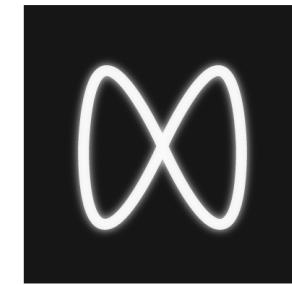
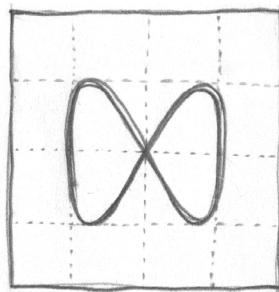
The media project is born with the purpose of investigating the relationship between sound and vision, chaos and order, closely related to astronomy, mathematics & physics. It explores the field of harmony and disorder and let the user dip into an elegant, dreamlike, minimalistic yet chaotic space which reflects the complex rules of the universe in all its abstract beauty.

The software shows sound oscillations as XY matrix functions and creates complex graphics curves. **Lissajous** graphically describes sound and allows observation of constantly varying signal voltage of two audio signals as function of time. Video generated by sound can be controlled in endless ways by giving to the user the possibility of a wholenew range of interactions.

Lissajous: A universe of shapes.

LISSAJOUS

Logo Identity



LISSAJOUS

Instructions



Lissajous is composed of two windows. The first one is the control panel, the other one is the video generator.

On the control panel you can start generating sound by clicking on the [**ON/OFF**] button and increase the volume with the [**Master**] control.

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Instructions



This software generates sounds from the main two VCOs. Each of them moves his behavior from more flute-like to more electric guitar-like behavior.

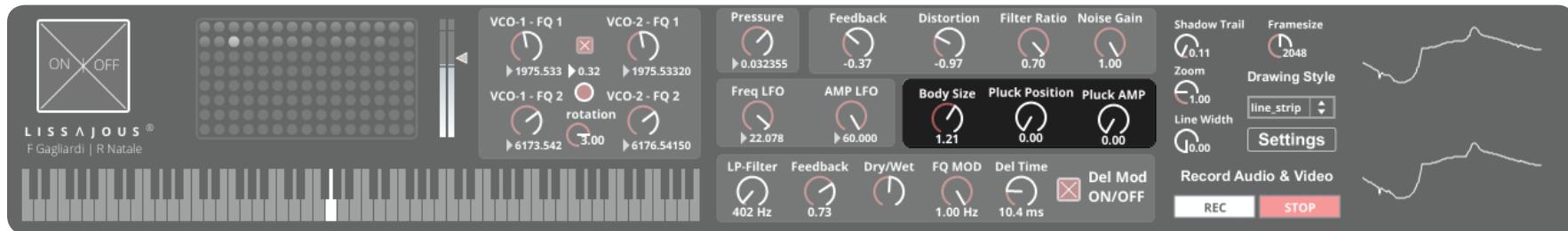
[**VCOs FQ1 & FQ2**] control the frequency of both VCOs electric guitar & the flute.

The [**Rotation**] parameter allows to slightly change the frequency of the VCOs (in this case the VCO2-F2) creating an acoustic beat effect and phase cancellation.

The [**Red Round Button**] sync/unsync VCOs-FQ1 with the keyboard.

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[**Pluck Position**], [**Pluck AMP**] and [**Body Size**] are powerful excitation methods for both electric guitar and the flute. It also allows the player to color the pluck with the body-filter of the impulse response (the [**Body Size**] parameter scales this impulse).

The [**Pluck Position**] and the [**Pluck AMP**] control the position and the strength of the pluck on physically modelled string.

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The outputs from guitar-like & flute-like strings are summed and combined with whatever breath [**Pressure**] the player provides and then fed into the "distortion unit" and feedback delay line.

The [**FQ LFO**] and the [**AMP LFO**] control the speed and the amount of the LFO.

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[Feedback] [Distroton] and [Filter Ration] parameters are used to square the **Lissajous** shapes.

[Feedback] change the internal Karlplus-Strong feedback coefficent and in this modeled system causes the sound to "build up" overtime.

[Filter Ratio] interpolates between the one-pole filter of the flute and the lowpass filter of the plucked string.

It's also possible to add a noise signal with the [Noise Gain] control.

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A [Keyboard] to control VCOs Frequencies (it's possible to use any workstation, such as Ableton Live, to send midi notes to the app).

[Presets] is a list of presets. [shift+click] to store a new preset or overwrite an existing one.

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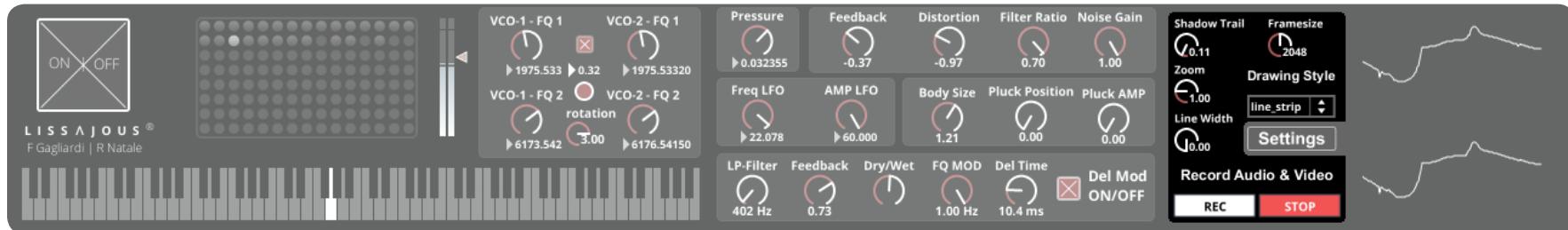
The delay section is designed following the loop process of a tape delay effect.

It's possible to change its [**Delay Time**], [**FQ MOD**] parameter or overload the machine with the [**Feedback**] coefficient.

[**LP-Filter**] is a Low-pass Filter on delay lines.

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[Zoom] is to control the distance of the rendering video zooming in and out from 0% to 300%. Change the [Framesize] to draw from 10 to 3072 points in time of the audio functions to be represented.

Other interesting and useful video controls are the [Shadow Trail], which controls the sharpness, the [Line Width] the size of the functions and the [Drawing Style] which sets the style of the drawings (**Points**, **Lines**, **Line Strips**, **Triangles**).

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[Settings]

(DSP Status Window)

The DSP Status Window shows you the complete set all of the parameters of audio input and output in MSP.

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Keyboard Shortcuts

[**space**]
[**enter**]
[**esc**]
[**shift-click**]

Full screen mode
DSP on/off
Hide/show menu bar
Shift click on a preset button to store
the parameter settings

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Specification

[OS]
[Cross-platform]
[RAM]

Macintosh | Windows
Java | Oracle
>= 4GB

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Resources & References

Built & Designed in Max/MSP 5 | Cycling74¹
Based on blotar~ object of PeRColate Library²

Kevin Karplus and Alex Strong: "Digital synthesis of plucked-string and drum timbres"³
Van Stiefel, Dan Trueman, and Perry Cook: "Re-coupling: the uBlotar synthesis instrument and the sHowl speaker-feedback controller"⁴

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Credits & Contacs

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