

concrète is a virtual tape exploration script for norns. highly inspired by the concepts of the morphagene eurorack module but intentionally not a 1:1 replica. Load or record audio, cut it into splices, explore the sonic variations with four interlinked play heads, re-record, mangle, dream, dismantle. Use concrète as a weird multitap delay, a four-voice polyphonic sample player, or even simple audio tool to cut and export audio files. There is much to explore. The following pages should cover all you need to know to start your journey. If something should be unclear, please post your questions on // in the concrète thread. Enjoy!

Requirements:

▷ norns

Supports:

▷ midi
▷ grid
▷ arc
▷ crow

NORNS INTERFACE:

Concrète has four pages [**TAPE**, **ESSAI**, **VOIX** and **ENVELOPE**]. Use **ENC1** to scroll between pages. The envelope page is accessible via **GRID** or via **ENC1** if the envelope is active (see **GRID/PARAMETERS**).

TAPE:

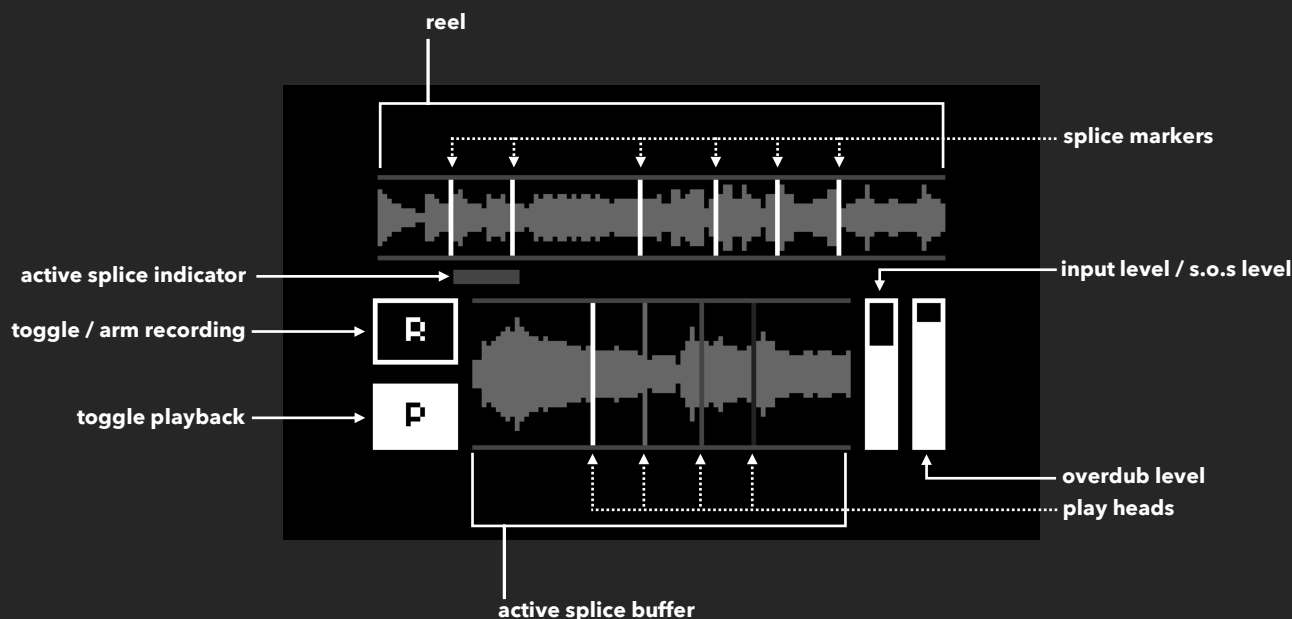
Before we get into any specific functions let's cover some of the terminology:

REEL ► The *reel* refers to all audio material loaded or recorded into the script. The maximum length of a reel is 320 seconds. If a file longer than 320s is loaded, it will be truncated. While recording, the recording will stop when the maximum reel length is reached. Concrète records in mono (48kHz) and loads and exports mono files. If a stereo file is loaded, the *left* channel will be used.

SPLICE ► A *splice* is a segment of the reel, defined by two *splice markers*. Splice markers can be seen as virtual cuts of the tape reel. Splice markers need to be manually set and can be shifted and removed. The maximum number of splice markers is only limited by the minimum splice size (0.01s) and maximum reel length, so in practical terms it's very unlikely to reach the limit. The currently selected splice is referred to as the *active splice* and the active splice defines the playback window.

TAPE (continued):




The **TAPE** page has two sections: the upper half of the screen [**reel view**] displays the buffer of the *reel*, the *splice markers*, and the *active splice*. The lower half [**splice view**] displays the buffer of the *active splice*, the *active play heads*, and the *playback/recording controls*. Use **K2** to switch between **reel view** and **splice view**.



reel view:

- ▶ Turn **ENC2** to nudge the play heads back and forth.
- ▶ Turn **ENC3** to select the active splice.
- ▶ Press **K3** to add a splice marker. The placement of the splice marker corresponds to the current position of the main play head (splice markers can only be placed while playback is running).
- ▶ Hold **K1** and press **K3** to remove the splice marker at the **end** of the active splice.
- ▶ Hold **K1** and turn **ENC2** to move the splice marker at the *beginning* of the active splice. Note that this cannot be done to the first splice of the reel, as there is no "start" marker.
- ▶ Hold **K1** and turn **ENC3** to move the splice marker at the *end* of the active splice. Note that this cannot be done to the last splice of the reel, as there is no "end" marker.

splice view:

- ▶ Turn **ENC2** to set the input level / s.o.s level. When set to s.o.s the indicator is striped, when set to input only its solid. (see **PARAMETERS > RECORDING**).
 - ▶ Turn **ENC3** to set the overdub level (when at 100% all audio material is preserved when recording over it).
 - ▶ Hold **K1** and turn **ENC2** to set the recording destination (see **PARAMETERS > RECORDING**).
- indicators: **follow loop**  **active splice**  **new splice** 
- ▶ Hold **K1** and turn **ENC3** to set the recording mode [**input only, s.o.s**] (see **PARAMETERS > RECORDING**).
 - ▶ Press **K3** to toggle playback.
 - ▶ Hold **K1** and press **K3** to **toggle** recording on/off or press **K2** to **arm** recording (see **PARAMETERS > RECORDING**).

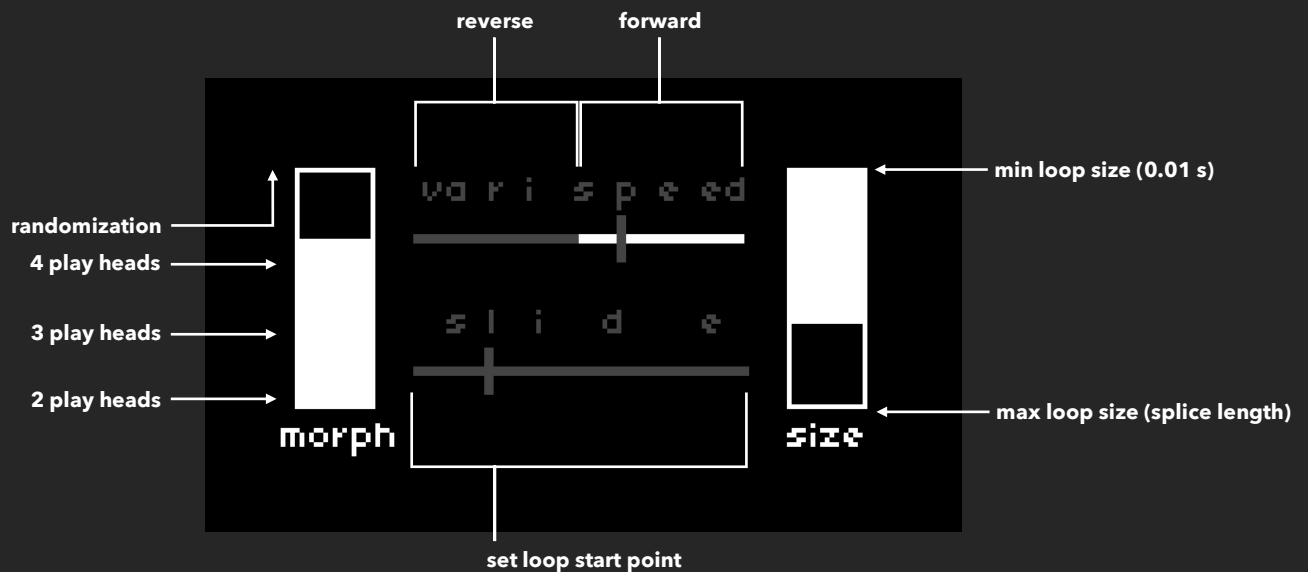
ESSAI:

The **ESSAI** page is named after "*le studio d'essai*" and is where the experimentation begins. Let's cover some terminology first:

- MORPH** ► The **morph** parameter sets the number of active play heads and their relative distance. The distance between play heads is calculated approximately by $\frac{\text{loop size}}{n \text{ play heads}} * \text{morph}$ so although the distance between play heads increases with the morph value, it is also decreased when a further play head is added. At a morph value of 60 the max. number of play heads (4) is reached and at values > 75 randomization of **level**, **pan** and **rate** is introduced (see **PARAMETERS > ESSAI**). Note that newly calculated distances aren't applied continuously but at each *start-of-loop* event (when the first play head returns to its start position defined by **slide**). *This is a quirk originating from how loops need to be handled in concrète (which might be addressed in future).*
- SIZE** ► The **size** parameter sets which portion of the active slice is played back. In other words: by reducing the size value, the *loop window* of the active play heads is reduced, resulting in smaller loops. At max value the loop window corresponds to length of the active splice and at min value a micro-loop of 0.01s. As notes above the size value influences the distance between the active play heads, so when the loop window is reduced, the distance between the play heads becomes smaller.
- SLIDE** ► The **slide** parameter sets the starting point of the loop(s). At 0% the start point corresponds to the beginning of the active splice and at 100% to the end of the active splice. *Try setting size to a very small value and gradually change slide to hear its effect best.*
- VARISPEED** ► The varispeed parameter ranges from -400% to +400% and sets the global playback speed of the play heads. Playback runs forward with positive values and in reverse with negative values. Unity 1:1 is at 100% and at 0% the playback stops even though the tape transport is still active. Varispeed can be controlled continuously or in discrete steps resulting in pitch jumps (see **PARAMETERS > ESSAI > scale**).

ESSAI (continued):

The **ESSAI** page has two sections: an inner section with **varispeed / slide** and an outer section with **morph / size**. Use **K2** to switch between sections.



morph / size:

- ▶ Turn **ENC2** to change morph value.
- ▶ Hold **K3** to momentarily set morph to max.
- ▶ Hold **K1** and press **K3** to freeze the randomized parameters (only has an effect when morph > 75).
- ▶ Turn **ENC3** to change size value.

varispeed / slide:

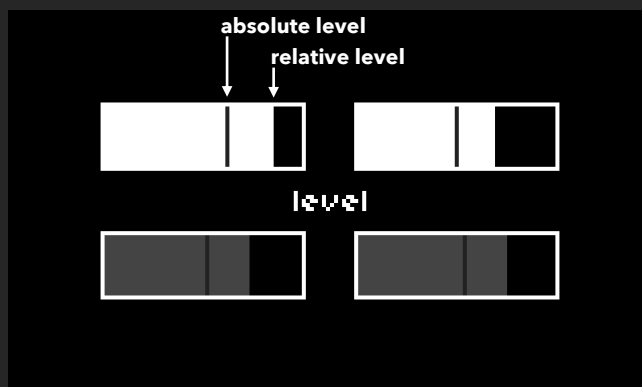
- ▶ Turn **ENC2** to change the varispeed value.
- ▶ Hold **K1** and turn **ENC2** to snap to the closest scale value.
- ▶ Press **K3** to change playback direction.
- ▶ Turn **ENC3** to change the slide value.

VOIX:

The **VOIX** page has four sub-pages [**level**, **pan**, **cutoff** and **filter q**] to set the parameters of the four play heads. Press **K3** to cycle through them. The top two "faders" control play heads 1 and 2 and the bottom two control play heads 3 and 4.

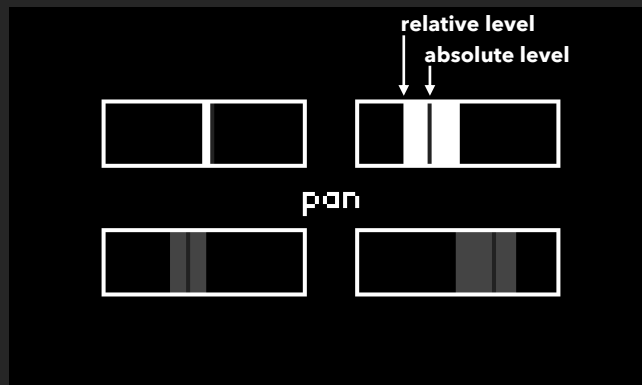
level:

- ▶ Press **K2** to select top or bottom row.
- ▶ Turn **ENC2** or **ENC2** to change the level.
- ▶ Hold **K1** and turn **ENC2** to change the global level. The individual voice levels are multiplied by the global level → indicated by a black line (see **PARAMETERS > VOIX**).



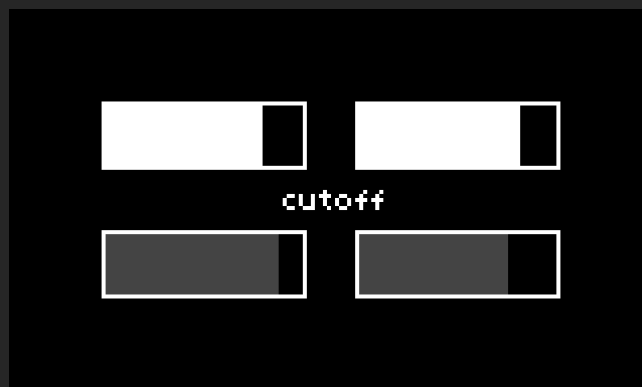
pan:

- ▶ Press **K2** to select top or bottom row.
- ▶ Turn **ENC2** or **ENC2** to change the pan position.
- ▶ Hold **K1** and turn **ENC2** to change the global pan settings. The individual pan position is multiplied by the global pan amount. (see **PARAMETERS > VOIX**). Note that when pan is randomized the pan positions are ignored and restored when randomization stops.



cutoff:

- ▶ Press **K2** to select top or bottom row.
- ▶ Turn **ENC2** or **ENC2** to change the level.
- ▶ Hold **K1** and turn **ENC2** to change the cutoff value for all four play heads.



VOIX (continued):

filter q:

- ▶ Press **K2** to select top or bottom row.
- ▶ Turn **ENC2** or **ENC2** to change the level.
- ▶ Hold **K1** and turn **ENC2** to change the filter q value for all four play heads.



ENVELOPE:

The **ENVELOPE** page is always accessible via **GRID**. If no grid is connected the envelope can be activated via **PARAMETERS > KEYBOARD**. When active it's also accessible via **ENC1**. The envelope is an ADSR envelope and controls the level of all four play heads independently when the **mode** is set to **POLY**. Note that when the envelope is activated the current level settings are stored and then set to 0, so if no keys (grid or midi) are pressed there is silence, and no play head indicators are visible in the active splice window on the **TAPE** page.

If the **mode** is set to **MONO**, key presses will gate all four envelope generators for all four voices according to the ADSR settings. If set to **POLY**, subsequent key presses will gate the according envelopes. There is no voice stealing implemented, so if four keys are pressed a key needs to be released first to play a new note. Also, the play heads are addressed sequentially, so the first key press always addresses the first play head, the second key press the second play head etc. This leads to a pleasing by-product: when morph is set relatively high (e.g., > 80), a chord will not sound the same when the same notes are pressed in a different order.

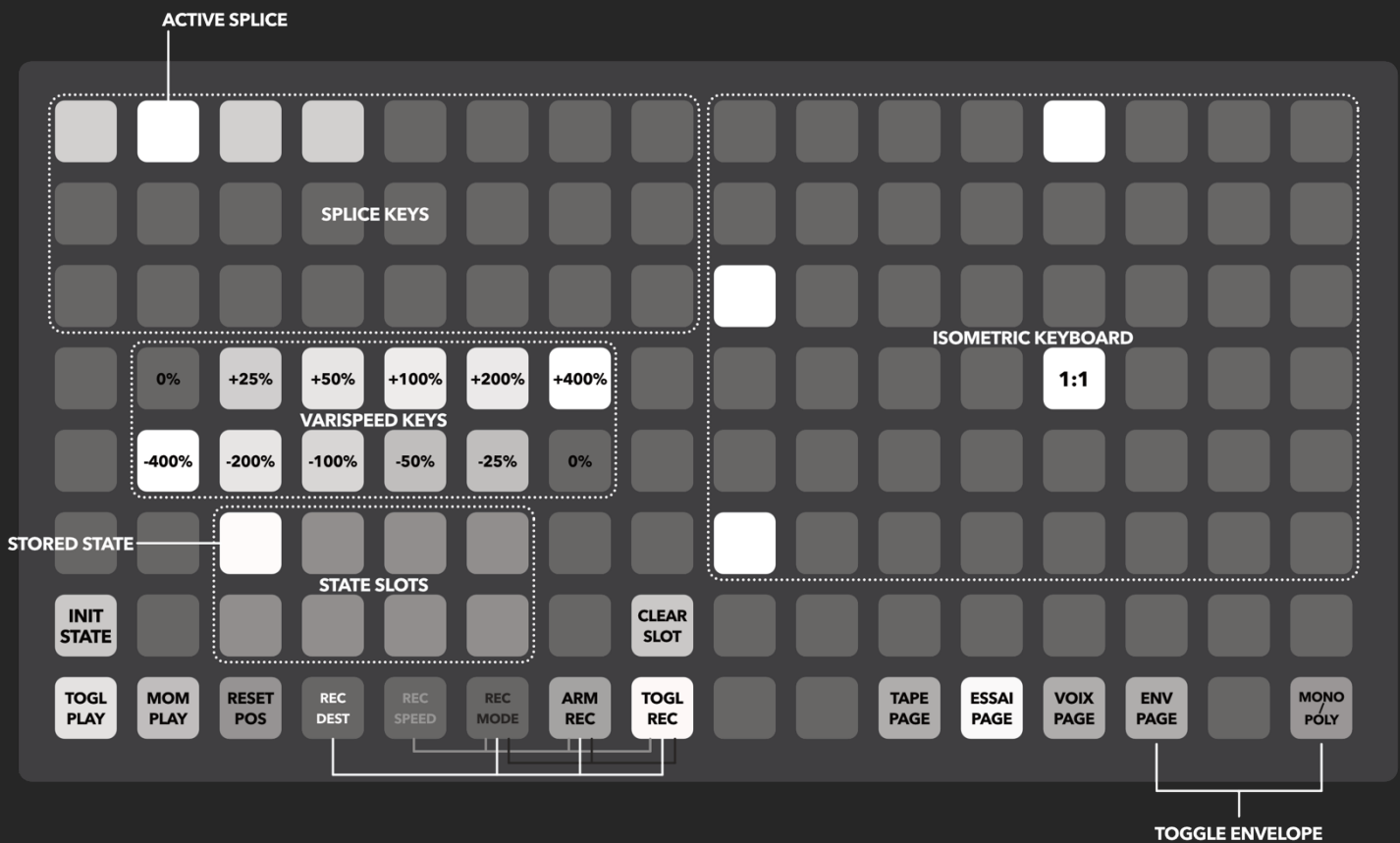
Please note that a play head needs to be active to be heard, so for 4 voice polyphony a morph value > 60 is required.

- ▶ Press **K2** to select between "AD" and "SR"
- ▶ Turn **ENC2** or **ENC2** to change the time/level. The sustain level refers to the % of the individual voice level **prior** to the envelope activation.



GRID:

Currently concrète is written for varibright grids with 128 keys. However, 64 key monobright support will probably be added in future. A grid is not required to operate concrète but does bring some additional features.

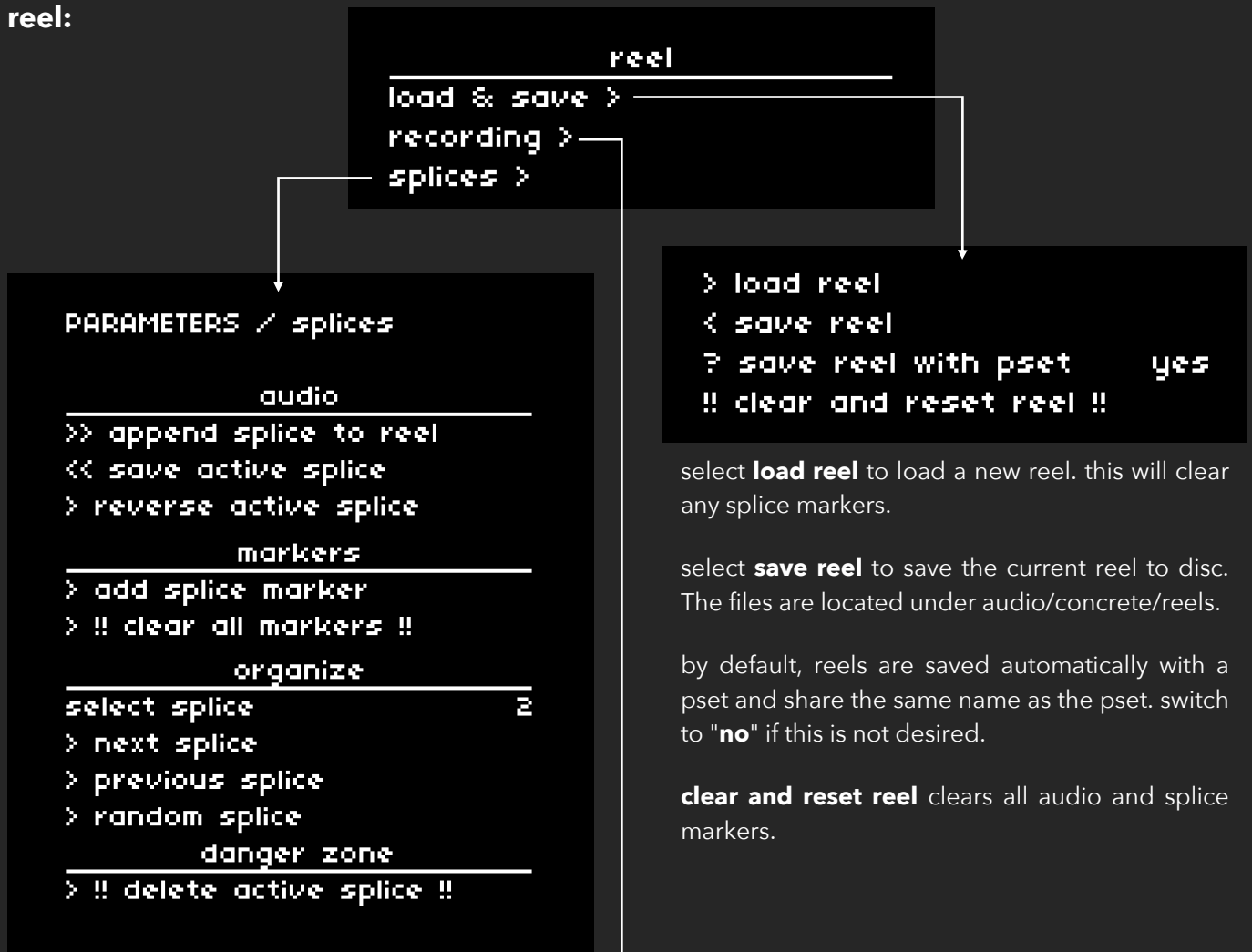


- ▶ **SPLICE KEYS:** This section displays the first 18 splices of a reel. Press any dark key to add a new splice, the splices keys are populated sequentially. Press any lit key to select the active splice.
- ▶ **VARISPEED KEYS:** Press a key to set the varispeed parameter to the corresponding setting.
- ▶ **STATE SLOTS:** Press an empty state slot to store the current **varispeed**, **slide**, **morph** and **size** values. Keys with stored states are brighter than empty ones. To clear a state slot, hold **CLEAR SLOT** and press the according slot key.
- ▶ **INIT STATE:** Press this key to set **varispeed**, **slide**, **morph** and **size** to their initial values.
- ▶ **TOGL PLAY:** Toggle playback on/off.
- ▶ **MOM PLAY:** Momentarily flip the state of the playback.
- ▶ **RESET POS:** Reset the start position of the play heads.
- ▶ **REC DEST:** Hold **REC DEST** and press one of the indicated keys to set the destination of the record head [follow loop, active splice, new splice].
- ▶ **REC SPEED:** Hold **REC SPEED** and press one of the indicated keys to set the speed of the record head [follow, constant, hispeed].
- ▶ **REC MODE:** Hold **REC MODE** and press one of the indicated keys to set the record mode [input only, s.o.s].
- ▶ **PAGE KEYS:** Press the according key to set the page. Hold **ENV PAGE** and press **MONO/POLY** to toggle the envelope.
- ▶ **MONO/POLY:** Toggle how the isometric keyboard / midi keyboard addresses the play heads.

PARAMETERS:

The parameters are grouped into three sections: **reel**, **voix**, **essai** and **keyboard**. All parameters are midi mappable. If a crow or an arc are detected when the script is loaded, the corresponding parameters will appear in the top menu below "**CLOCK**". These are not covered in the manual but are easy to figure out.

reel:



select **append splice to reel** to load an audio file and append it as a splice at the end of the reel. *this is useful to load short samples to make a sample library for mellotron style playing.*

select **save active splice** to save the active splice to disc. saved splices are located under audio/concrete/splices.

select **reverse active splice** to flip the audio file.

all parameters under **markers** and **organize** are meant for midi mapping purposes.

delete active splice does what it does, so be careful. this is useful to delete parts of a reel that need to be discarded or to get rid of unwanted gaps of silence.

select **load reel** to load a new reel. this will clear any splice markers.

select **save reel** to save the current reel to disc. The files are located under audio/concrete/reels.

by default, reels are saved automatically with a pset and share the same name as the pset. switch to "**no**" if this is not desired.

clear and reset reel clears all audio and splice markers.

reel (continued):

PARAMETERS / recording

```
> toggle rec
mode                s.o.s
input               summed
destination         new splice
rate                constant
threshold           -12.0 dB
s.o.s level         68%
rec level           100%
overdub level       84%
record ghost        yes
```

toggle rec is meant to be mapped to a midi controller if required.

mode sets the recording mode to either **input only** or **s.o.s**.

input sets which of the adc inputs are used.

destination specifies the behaviour of the rec head: when set to **follow loop** the rec head follows the first play head and is linked to the current loop window. when set to **active splice** the rec head moves within the active splice, regardless of the loop window. when set to **new splice** the rec head jumps to the end of the last splice and records a new splice at the end of the reel.

rate sets the speed of the rec head. when set to **follow** the rec head will follow all varispeed changes. when set to **constant** the rate is fixed to the varispeed rate at the moment of engaging rec. when set to **hispeed** the rate is 2x the constant rate. the recorded material will result an octave lower as recorded.

threshold sets the threshold level for armed recording. when the input reaches the threshold recording will start.

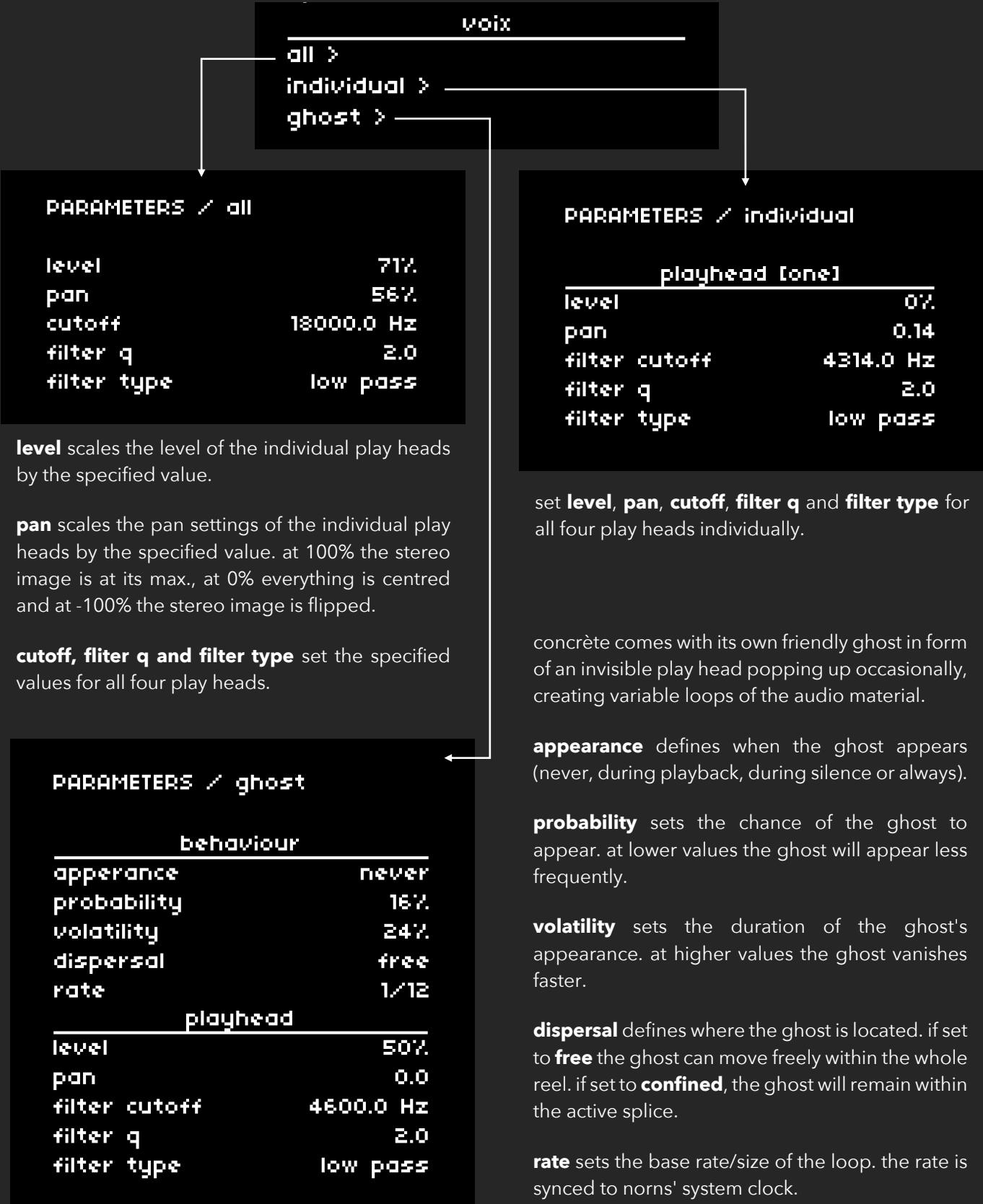
s.o.s level sets the balance between input signal and the play head signals when **mode** is set to s.o.s. At 100% only the signal from the playheads is recorded, at 0% only the input signal.

rec level is by default at 100% and you can leave it there unless you have super-hot signals that need to be tamed if having difficulties finding a good s.o.s balance.

overdub level sets the amount of the recorded material that is preserved with each pass of the rec head. At 100% everything is kept and at 0% everything wiped.

record ghost does what it says.

voix:



essai:

```
      essai


---


> toggle play
> reset position
tape transport      new
varispeed           100%
scale               oct
slide               0%
size                100%
morph               0%
morph mode          normal
morph clock         1/8
randomization settings >
```



```
PARAMETERS / randomization

probability          20%
level @morph > 75    off
pan @morph > 75      on
rate @morph > 80     on
> freeze values
```

toggle play and **reset position** are meant to be mapped to a midi controller if required.

tape transport sets the condition of the virtual tape transport. when set to **new** playback is constant and rate changes are immediate. all other settings gradually introduce rate slew and tape warble up to the point where it sounds broken.

varispeed, **slide**, **size** and **morph** set the corresponding values as on the **ESSAI** page.

scale sets the scale to which varispeed can snap in discrete steps.

morph mode is set to **normal** by default meaning the play heads move within the loop defined by size and slide. when set to **clocked**, the loop window advances by the size of the loop window at the rate specified by **morph clock** (if the size parameter is < 100%). this results in loop window stepping through the active splice. the rate is synced to the norms' system clock.

when morph is > 75 randomization events occur. how often and what is randomized is set here:

probability sets the frequency in which the parameters are randomized. when set to 100% a randomization event occurs every 1/16 note (syncd to norms' system clock.)

the randomization of **level**, **pan** and **rate** can be turned on or off.

freeze values is meant to be mapped to a midi controller if required. when frozen the current settings are maintained even when further randomization events occur.

keyboard midi/grid:

keyboard midi/grid	
midi device	1: OP-2
midi channel	1
root note	C3
interval [y]	4st
mode	mono
envelope	on
envelope settings >	

this section sets the parameters for playing concrète chromatically with the grid/midi input.

midi device selects the midi input.

midi channel sets the channel to listen to.

root note sets the relative base note when playing with a midi keyboard. if e.g., the pitch of the recorded material is in D# set the root note to D# for automatic transposition i.e., playing a C will result in a C and not D#.

interval[y] sets the shift in semitones along the y axis of the grid.

mode sets whether the keys address the play heads monophonically or polyphonically.

envelope toggles the ADSR envelope on/off.

under **envelope settings** the parameters of the ADSR envelope are set.

SAVING AND LOADING SESSIONS:

Complete sessions can be saved and loaded via norns' pset manager. When a pset is **saved** a folder within **data/concrete** is created with the corresponding pset number (e.g., **data/concrete/01**). Within this folder a file is stored, which contains all splice and state data and the path of the audio file. When a pset is **loaded** the .pset file together with audio file, the splice and state data are loaded into concrète. When a pset is deleted the corresponding folder with the data is deleted too. Audio files need to be deleted manually.

By default, a reel is automatically saved as a mono wav file with a pset and is stored under **dust/audio/concrete/reels** as **"pset-name".wav**. Renaming or moving a referenced audio file will result corrupt the pset and will not load properly.