

Ableton Sampler Tutorial – www.3amnoise.net

Break Beats

Ableton Live is a great tool for loop based music but it's use of clips is only the beginning. Any clip can be dragged into an Ableton "Sampler"(Fig. 1) or "Simpler" (Fig. 2) instrument for further bending and twisting. This tutorial will specifically detail how to use these awesome sample playback tools to get even more loop destruction out of Live.

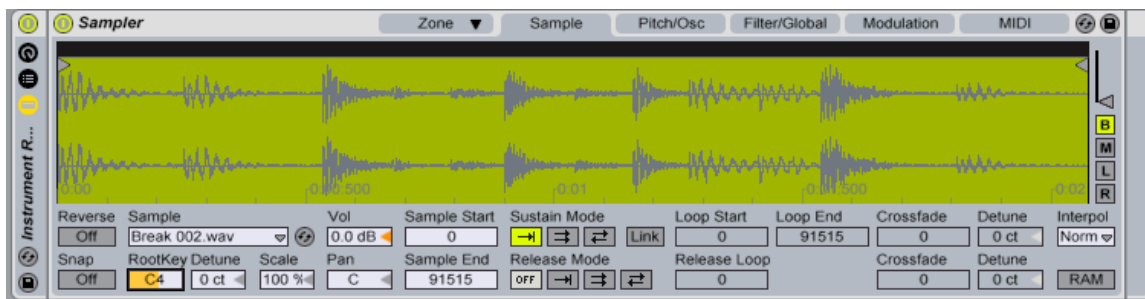


Fig. 1

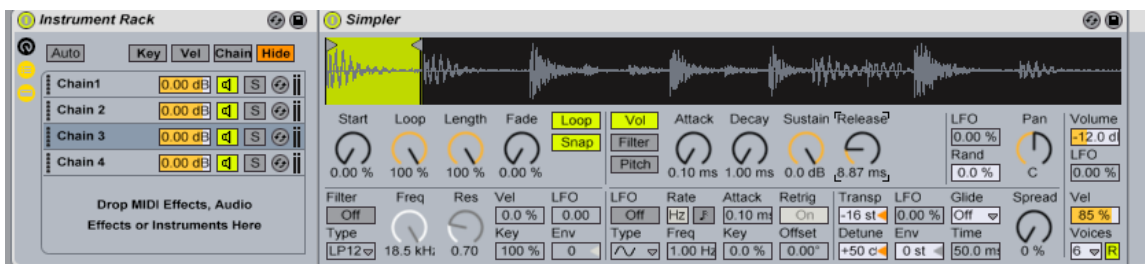


Fig. 2

Before automatic tempo detection, time stretching and warp markers; syncing a loop to your song meant recording it into a sampler and “tuning” it to the beat, the way a DJ beat matches. This can be a very tedious process but there are some unique benefits to loading loops into a sampler rather than just using clips. There is a certain amount of flexibility that a sampler provides that isn’t available in clips. These techniques aren’t really meant to replace the audio clips in Live but they are an excellent supplement.

Tuning your loop:

When you bring a sample into Sampler or Simpler it won’t automatically snap to the tempo like an audio clip will. Instead you use the transpose (or pitch) controls to “tune” the loop. (see Fig. 3 and Fig 4)

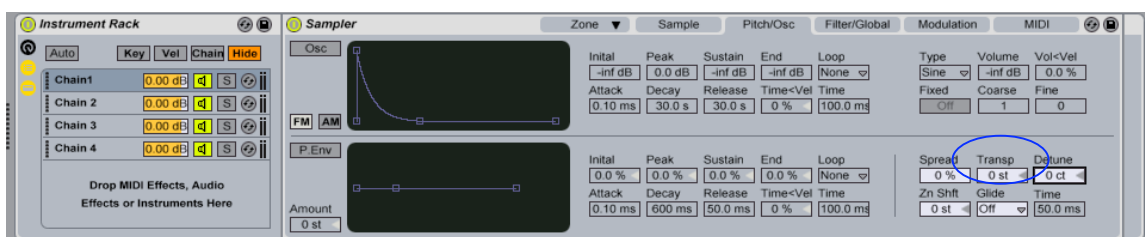


Fig. 3

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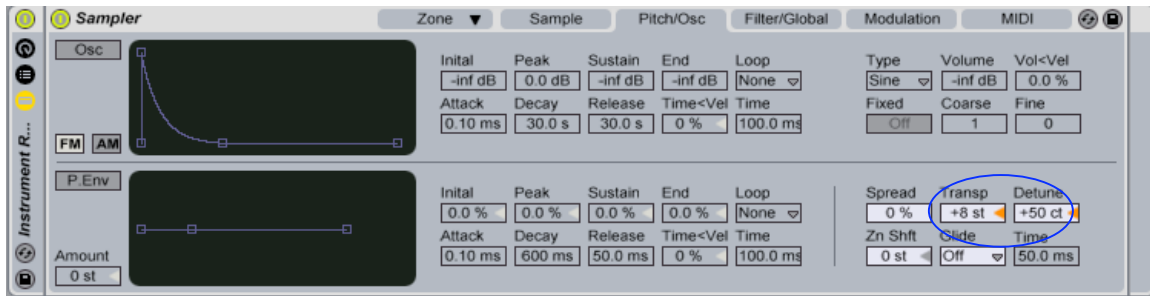


Fig. 4

The original tempo of the loop is 115 BPM and my project tempo is 192 BPM so to match the tempos I have transposed the loop up 8 and a half steps. The amount of transposition that needs to be done requires some critical listening. What I do is create a midi clip, draw a one bar midi note (for a one bar sample, two bars for a two bar sample and so on) at the samples root and loop that clip; the sample will loop out of time but you can adjust the transpose knob to get near the projects BPM. I usually adjust the transpose too far so that there is a noticeable gap between the end of the sample and the beginning of the next repetition, then I decrease the “detune” till the there is no audible gap. Sometimes you’ll have to adjust the detune more that a half step, in which case you can go to the next step up or down and increase or decrease the detune accordingly.

Once the loop is tuned to the tempo of the song I duplicate the sound in the zone editor so I have multiples of the same loop. I then adjust the key range and root note so that each loop has it’s own key (Fig. 5). Once each loop has it’s own key or key range, I adjust the sample start position of each loop to start at a different point in the loop. For example the first copy will usually start at the first kick drum hit, the next one will start at the first hi-hat, the next one will start at the first snare drum and the next one will start at the beginning of the fill (Fig. 6-8)

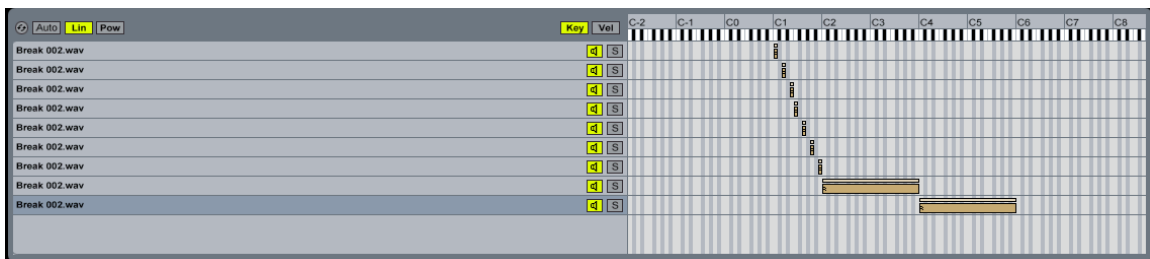


Fig. 5

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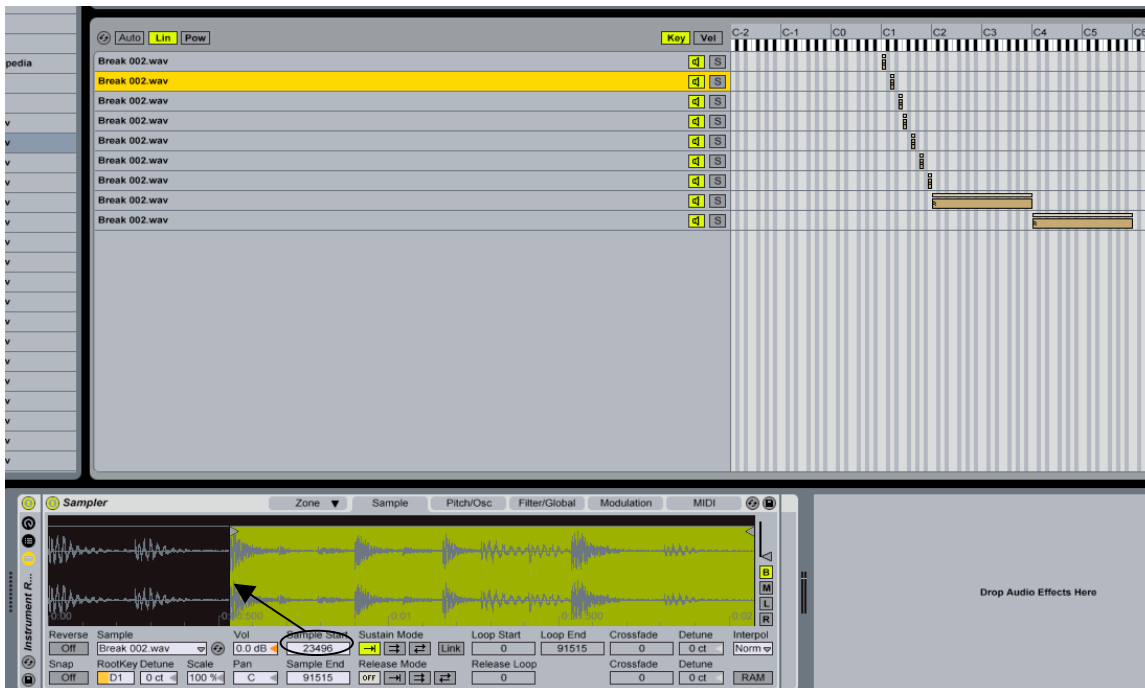


Fig. 6

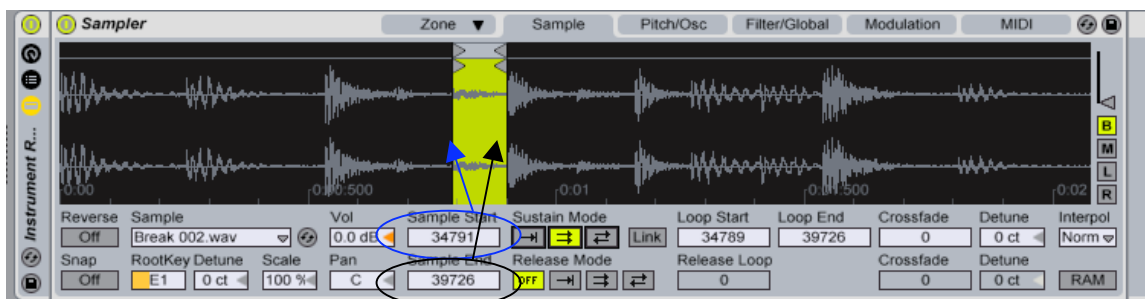


Fig. 7

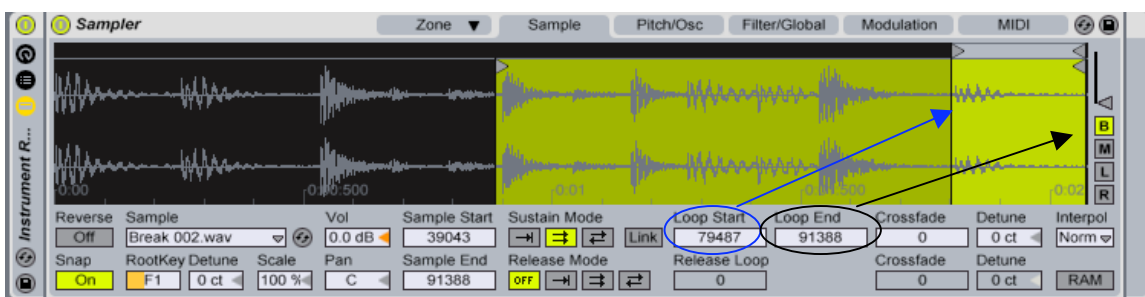


Fig. 8

If you compare the included audio files “Original.mp3” and “Reprogrammed 01.mp3”, you will notice how mapping the loops this way will allow you to reconstruct the rhythm to fit your project and more easily start and stop the loop at any position you want. The midi file used to create Reprogrammed 01.mp3 is illustrated in Fig. 9.

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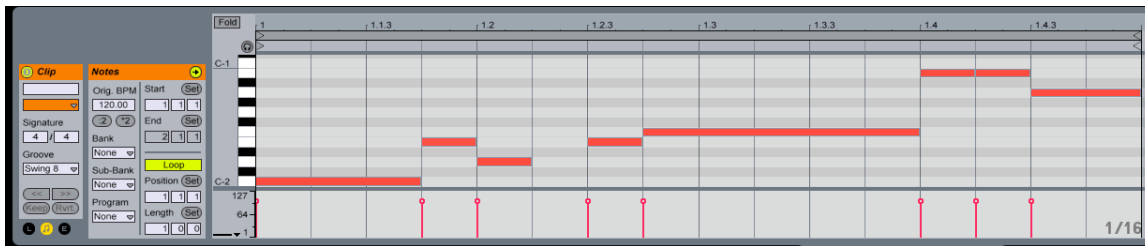


Fig. 9

Manipulating the Loops:

Now that we've covered how to easily trigger the existing loop in new ways we'll discuss how to make our new phases more expressive. There are many features built into Ableton's Sampler that will make it easy to animate simple sounds and even render them unrecognizable.

You may notice that, no matter what velocity a note is triggered at the loop plays back at the same volume. On the "Midi" page of Sampler there are many slots to midi sources and destinations. You can use these to map standard midi messages (Velocity, note value, channel aftertouch, etc...) to parameters in Sampler. A very common technique for adding dynamics to existing sounds is to map velocity to the volume control; the effect of which can be heard in the sound file Reprogrammed 02.mp3. Fig. 10 illustrates how Reprogrammed 02.mp3 was achieved with midi.

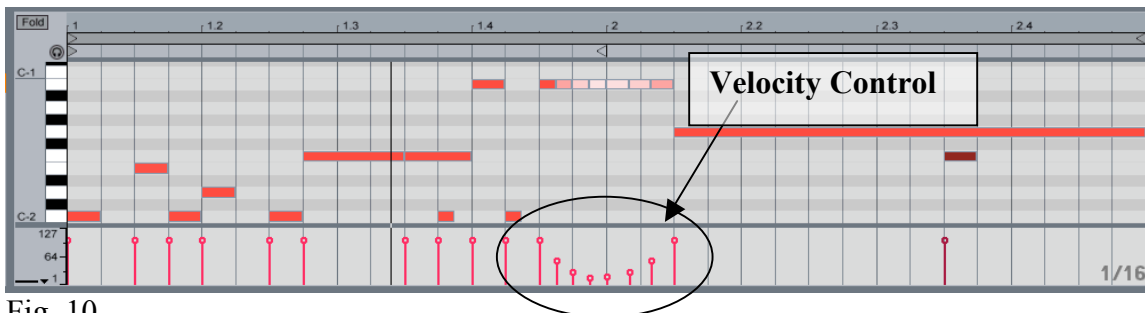


Fig. 10

There are tons of other things that can be mapped to these midi messages. It can be cool to map Filter cutoff to velocity or Filter cutoff to note value these are usually more useful when applied synth and instrument samples but can have interesting results with drum loops. Fig. 11 demonstrates the parameters that can be modulated from standard midi messages.

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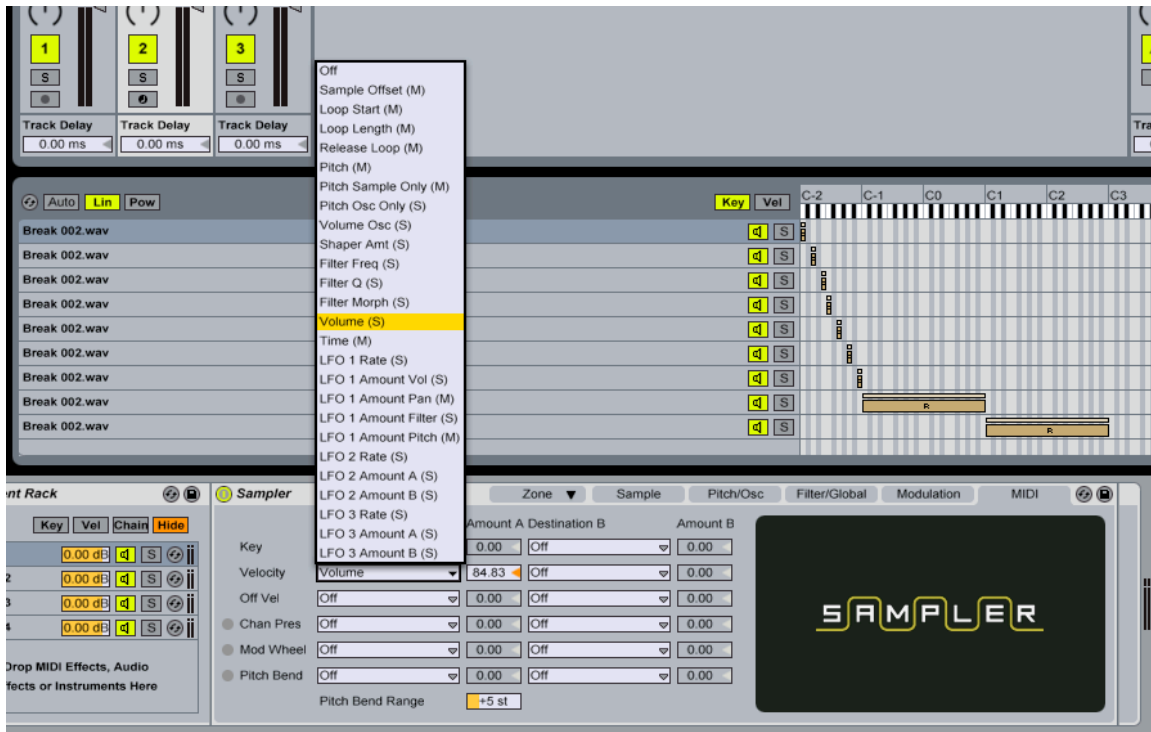


Fig. 11

Sampler also has a dedicated section for modulating pitch, which provides some amazing ways to manipulate our loop. There is a FM (Frequency Modulation) oscillator and a pitch envelope. The audio file “Pitchbend.mp3” demonstrates the effect that the envelope in Fig. 12 has on our loop. The FM oscillator can modulate the pitch of the loop at rates that reach audible frequencies, which can produce sounds similar to a ring modulator. The effects of the FM oscillator are demonstrated in the audio file “frequency modulation.mp3”, see Fig. 13-15 for details on how to get this effect.

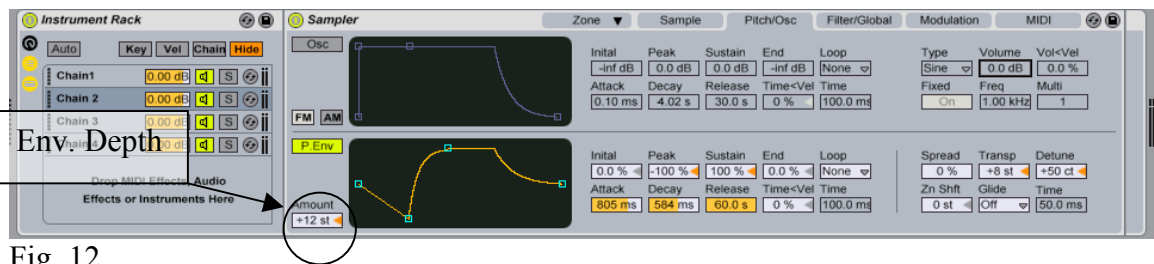


Fig. 12

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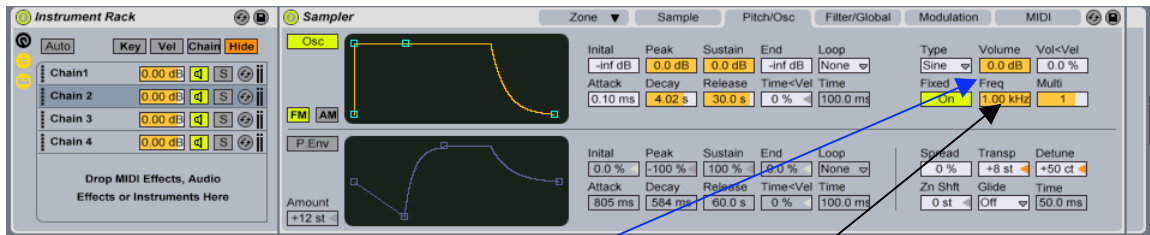


Fig. 13

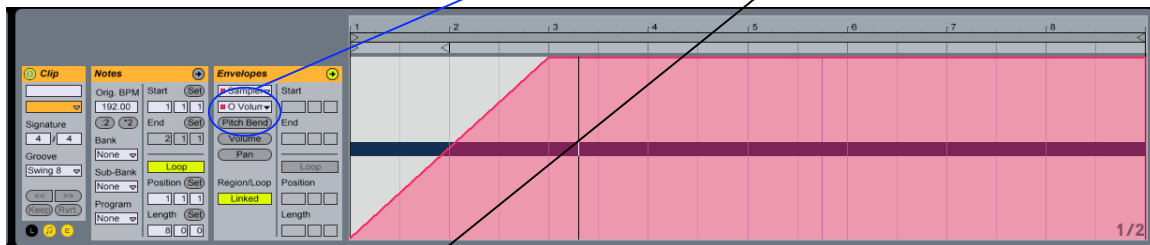


Fig. 14

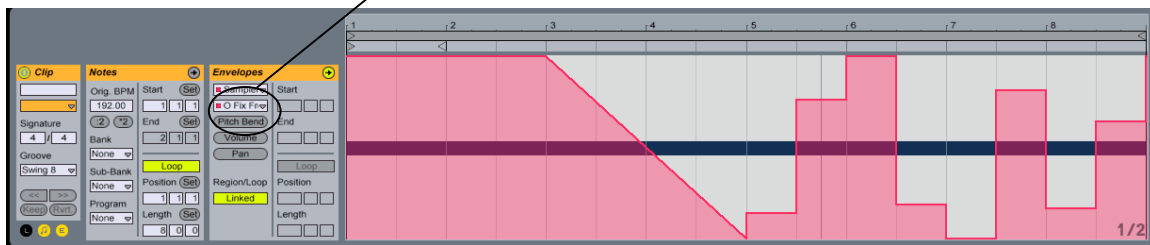


Fig. 15

A staple of any synth or sampler is its filter section. Sampler's multi-mode filter is extremely flexible because of the many modulation options and unique features suited for sound design. It has the standard high pass, low pass, band pass and notch in 12dB per octave as well as 24dB flavors, but what makes it stand apart is it's morphing filters. When set to one of the morph-able filters it can sweep from lp to bp to hp to notch and back to lp. This as well as the standard cutoff, resonance, envelope depth, key tracking and routable modulation sources make this an ideal filter for any kind of music. Fig. 16 shows the key features of Samplers Filter, Fig. 16 and 17 show the many modulation options. Not to mention the options already discussed, on the "Midi" routing page. Check out the audio file "filter morph.mp3" to hear the effect of the filter cutoff and mode morph parameters being tweaked.

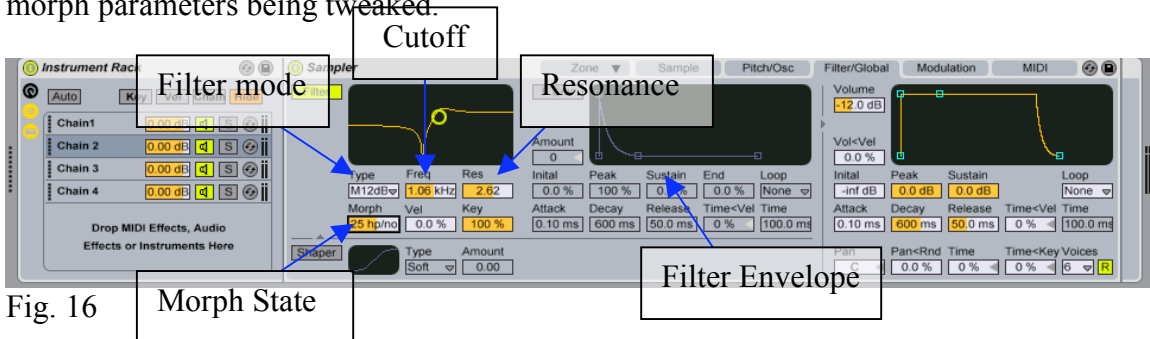


Fig. 16

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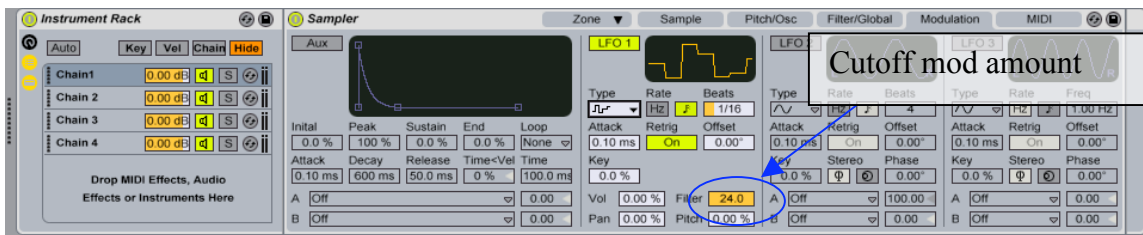


Fig. 17

All of the envelopes in Sampler have settings for initial value, attack time, peak level, decay time, sustain level, release time, end value and velocity scaling. The envelopes also have looping modes which allow them to act as LFOs, either free running or in sync with the project tempo. Many parameters can be modulated from several sources and all of the mod sources have at least two destinations; which allow for complex animation of the original sound. One LFO can even affect the rate or the depth of another allowing the creation very unique textures. LFOs have an offset parameter that allow them to maintain the same interval but with a different start and stop value as well as phase options which can be like having a separate LFO for each side of a stereo channel. See Fig. 18

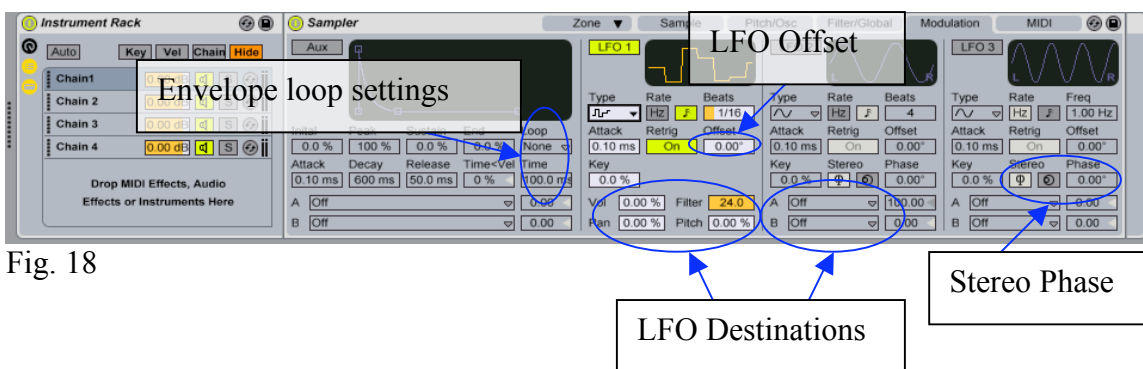


Fig. 18

Combinations of the features discussed here are demonstrated in the audio files “montage.mp3” and “freakout.mp3”.

Simpler:

There are some features that Simpler has that were left off of the sampler. Specifically the ability to automate sample length and sample offset manually. These parameters are needed to be able to get bouncing ball effects and manual time stretching. Fig. 19 and 20 illustrate how to achieve the bouncing ball effect and the audio file “bouncing ball.mp3” is an example of the result.

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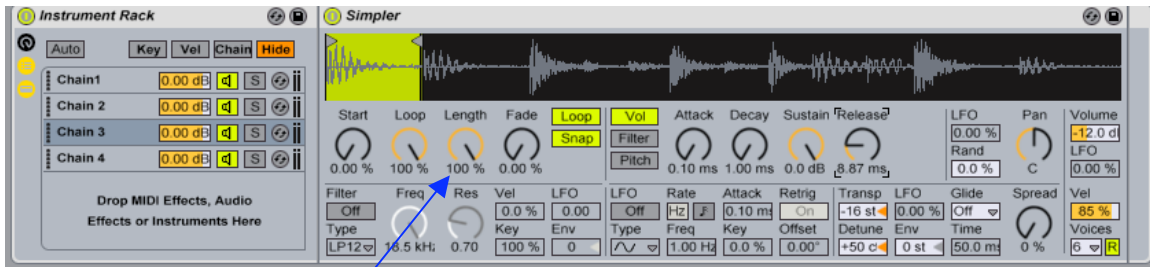


Fig. 19

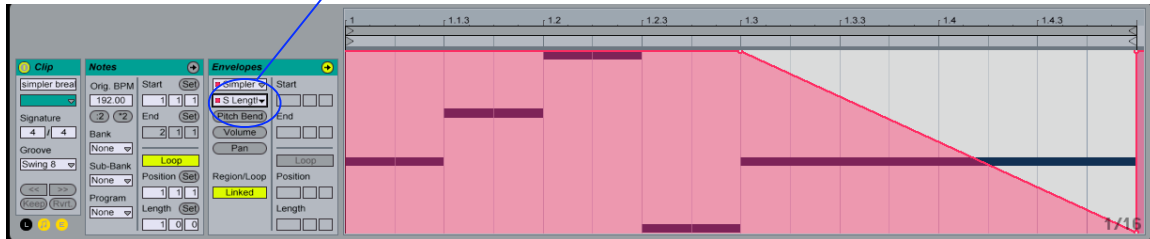


Fig. 20

Fig. 21-23 illustrate how to accomplish manual time stretching with Sampler. The audio file “timestretch.mp3” is an example of this effect.

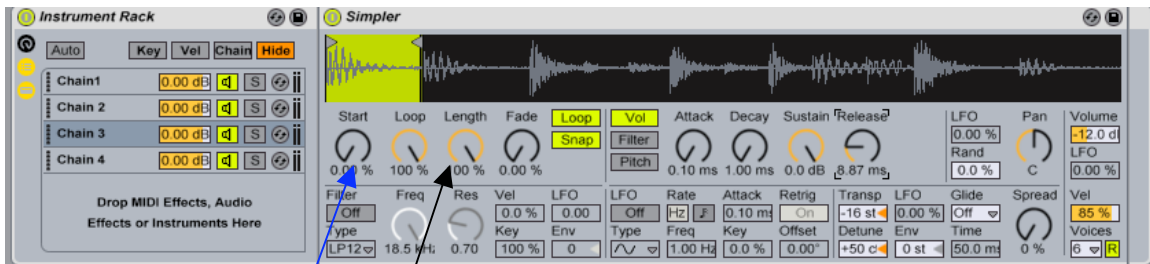


Fig. 21

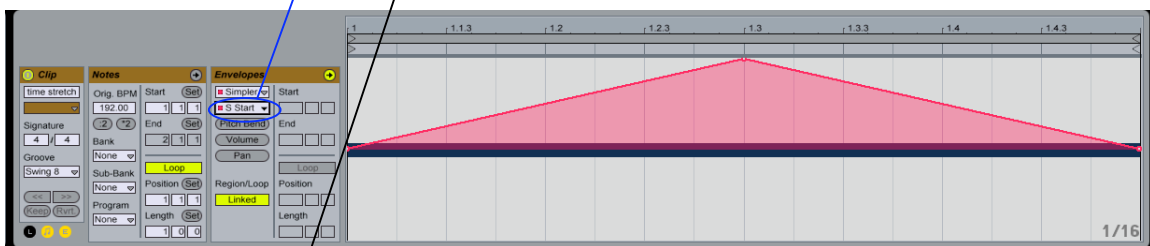


Fig. 22

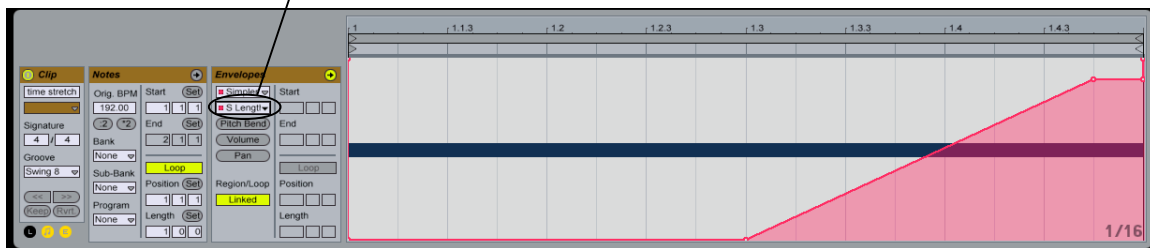


Fig. 23

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Fig. 23 and Fig. 21 show that when you start with a very small loop size and gradually change the sample start position it creates an effect similar to time stretching. Towards the end of the sample I reverse the sample start movement and gradually increase the loop size, which creates a modified bouncing ball effect.

I have included the Ableton Live project file used to produce this tutorial for anyone that wants to play with these techniques. You will require Live 6.0.7, and Sampler to be able to open this file; the loop is embedded. I created an instrument rack with two Samplers and two Simplers, each containing variations of the same loop. This was done so that every variation can be accessed from the same clip. Also each instrument in the rack can be affected independently or globally. It is possible to do much more with the concepts I've illustrated here but this is a good starting point for mangling drum loops.

If you have any questions or suggestions for future tutorials, feel free to e-mail me at justin@3amnoise.net