Karplus Strong synthesis in the Monomachine

Posted by futureimage - 2009/12/27 07:11

_____

Holy smokes, I think I just found the big one.

If you haven't already done so, go grab the latest OS update for the Monomachine from elektron.se (that's OS 1.22).

Load up one GND-NOISE machine and a FLANGER machine.

Route the NOISE machine into the FLANGER and mute the NOISE channel (i.e. unroute it from AB). Make sure that the FLANGER is set to neighbour (the FLANGER should be immediately after the NOISE machine channel-wise).

Set the NOISE machine's envelope to no hold, short decay and maybe short release so that you end up with a clicking type sound going to the FLANGER.

Turn the FLANGER's LFO off (i.e. turn DEP to zero). Set the FB parameter fairly high (i.e. over 60). You'll want to set a fairly long envelope for the FLANGER too.

Enter some notes in the sequencers of both the NOISE and FLANGER machines. Ideally, these should occur on the same steps.

Parameter-lock the DEL parameter of the FLANGER machine.

You should then have something that works a bit like Karplus Strong synthesis.

I'll post demos tomorrow. Elektron = Epic win.

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Re:Karplus Strong synthesis in the Monomachine

Posted by earsmack - 2009/12/27 09:15

_____

So for those of us needing a refresher...

http://en.wikipedia.org/wiki/Karplus-Strong_string_synthesis

I have this running now as described above and it's pretty cool. Just goes to show you the depth of these machines - once again!

Some other things I've done that make this even cooler sounding...

Add some delay to the Flanger track along with some SRR - very nice!

Add some distortion, cut the filter back a bit (also on the Flanger track).

Dang - tweak any params on either track - so much to explore here...good find futureimage!

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Re:Karplus Strong synthesis in the Monomachine

Posted by teacherofstalker - 2009/12/27 09:36

_____

Nice one FI, thanks for sharing!

Here's a similar approach for the MD:

Load a GND-NS machine. I used these values:
DEC: 49
FLTH: 108 (Smaller values = softer timbre / higher values = harsher attack transient)
DEL: 84

Load a CTR- RE machine. Some parameter guidelines:
TIME: 0 (!!)

MOD & MFRQ: Leave at 0 or change them to add vibrato if desired!
FB: 64 (Right on the verge of producing feedback)
FLTF: 0
FLTH: 127 (Sweep this towards zero to get a smoother decay)

Load a RAM-Rx / Px pair. Sample the sound, then pitch shift it, change decay etc.

Enjoy!
ToS

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Re:Karplus Strong synthesis in the Monomachine
Posted by anselmi - 2009/12/27 09:40
_____

yeah, itÂ´s a kind of KS synthesis for sure! good work

you can achieve similar results using the BBOX machine and p-locking different retrigger times...at this level retriggers acts as short delays, thus generating notes

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Re:Karplus Strong synthesis in the Monomachine
Posted by Allerian - 2009/12/27 11:03
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I got some sounds not unlike those of tapping a sloshing half-full pot of water with a metal spoon. :lol:

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Re:Karplus Strong synthesis in the Monomachine
Posted by Nils - 2009/12/27 13:44
_____

It should be possible with the track delay on very short delay settings, right? The delay is basically a flanger. The flanger machine gives you a lot more detailed control.

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Re:Karplus Strong synthesis in the Monomachine
Posted by futureimage - 2009/12/27 17:24
_____

Correct, you can get the same effect with a track delay. However, the beauty of this method is that it won't be affected by tempo changes. As soon as you start changing the BPM using the echo method, your pitches will stray.

Also, you reach more precise pitches using the flanger.

==

Re:Karplus Strong synthesis in the Monomachine
Posted by Nils - 2009/12/27 17:52
_____

futureimage wrote:
the beauty of this method is that it won't be affected by tempo changes.

Ah, great! The temposync of the delay is both an advantage and a drawback, depending on how you use it.

I was also thinking how cool it would have been if the flanger delay times followed a chromatic scale :)

==

Re:Karplus Strong synthesis in the Monomachine
Posted by futureimage - 2009/12/27 18:10

_____

Nils wrote:
futureimage wrote:
the beauty of this method is that it won't be affected by tempo changes.
Ah, great! The temposync of the delay is both an advantage and a drawback, depending on how you use it.
I was also thinking how cool it would have been if the flanger delay times followed a chromatic scale :)
Chromatic scaling would just be killer.......... that might well go in the feature request thread!

===

Re:Karplus Strong synthesis in the Monomachine
Posted by polyslax - 2009/12/27 18:44

_____

Fun stuff, thanks for that FI!

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Re:Karplus Strong synthesis in the Monomachine
Posted by futureimage - 2009/12/27 21:07

_____

Quick little audio demo!

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Re:Karplus Strong synthesis in the Monomachine
Posted by polyslax - 2009/12/27 21:29

_____

futureimage wrote:
Quick little audio demo!

Brilliant! The 2 tracks part is a wicked piece unto itself.

===

Re:Karplus Strong synthesis in the Monomachine
Posted by anselmi - 2009/12/28 03:50

_____

Nils wrote:
The delay is basically a flanger

well, I think is exactly the other way round :P

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Re:Karplus Strong synthesis in the Monomachine
Posted by Nils - 2009/12/28 14:39

_____

anselmi wrote:
Nils wrote:
The delay is basically a flanger

well, I think is exactly the other way round :P

Uhm, in fact that's what I was trying to say :blush:

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Re:Karplus Strong synthesis in the Monomachine
Posted by Nils - 2009/12/28 14:43

_____

futureimage wrote:
Quick little audio demo!

Nice! :cheer: Lock programming is the shit!

==

Re:Karplus Strong synthesis in the Monomachine
Posted by kirlian - 2009/12/28 15:41

_____

polyslax wrote:
futureimage wrote:
Quick little audio demo!

Brilliant! The 2 tracks part is a wicked piece unto itself.

+

awesome.:cheer:

==

Re:Karplus Strong synthesis in the Monomachine
Posted by anselmi - 2009/12/28 19:34

_____

excellent!!! I like it a lot when you use the LPF to shape the sound! definitly a trick to try!

==

Re:Karplus Strong synthesis in the Monomachine
Posted by xheindrichs - 2009/12/28 20:37

_____

Hi!

The second part (chaotic) is incredible? But ... how have you done this?

Bye

Xa

==

Re:Karplus Strong synthesis in the Monomachine
Posted by TrondC - 2009/12/28 20:52

_____

am I the only one not getting it? how does this differ from any normal MnM behaviour? sounds like a lot of mono stuff I've heard before exept for the flanger (obviously)... This is probably awesome to those of you with good ears, but to me, this just sounds like any other MnM demo, are my ears really that ignorant? ;)

fun sequence anyway, I like the latter part the best when it acts as a sort of rythm-machine

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Re:Karplus Strong synthesis in the Monomachine
Posted by reset - 2009/12/28 22:41

_____

should one be able to set the Flanger delay to follow keys in the track assign menu? Could be interesting to find chromatic KP here.

==

Re:Karplus Strong synthesis in the Monomachine
Posted by futureimage - 2009/12/29 02:11
_____

xheindrichs wrote:
The second part (chaotic) is incredible? But ... how have you done this?
Have you gone through the steps in my first post? If so, tell me what you don't understand about them and I'll try and make the tutorial a little clearer.

TrondC wrote:
am I the only one not getting it? how does this differ from any normal MnM behaviour? sounds like a lot of mono stuff I've heard before exept for the flanger (obviously)... This is probably awesome to those of you with good ears, but to me, this just sounds like any other MnM demo, are my ears really that ignorant?
The fact that this now provides another method of synthesis along with subtractive, wavetable and FM means that this update makes the Monomachine an amazingly powerful machine.

It's probably not your ears being ignorant, but my demo not being deep enough. You can get some really wild sounds going with this. P-Lock a "plucked" melody into a series of clicks and back again = cool. :cheer: The Flanger's internal LFO is fun to P-lock as well.

should one be able to set the Flanger delay to follow keys in the track assign menu? Could be interesting to find chromatic KP here.
I'll have to try that - I don't think it'll work because it'll get the flanger's time parameter to follow a linear scale... I THINK. It might not be the case, but I'm expecting it to be so.

==

Re:Karplus Strong synthesis in the Monomachine
Posted by swiv - 2009/12/29 04:05
_____

nice demo, just had to try this.. not a huge fan of the sound raw (like most mnm patches :laugh:) but once it's filtered and with a little verb it morphed into something quite nice.

If you have an LFO free add a fast LFO to flanger INP to avoid having to add trigs to two tracks!

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Re:Karplus Strong synthesis in the Monomachine
Posted by swiv - 2009/12/29 04:11
_____

.. or just set flanger track to trig the noise track..

:blink: :laugh:

==

Re:Karplus Strong synthesis in the Monomachine
Posted by xheindrichs - 2009/12/30 00:54
_____

Everything is bright clear to make this sound. But to understand the way you created the chaotic part of your demo (at 4.49, when you are saying "playing with this set up ...") is totaly nebulous for me... Actually, you are using your monomachine in a way I would like to learn...

Bye

Xa

==

Re:Karplus Strong synthesis in the Monomachine
Posted by futureimage - 2009/12/30 05:30
_____

In that section I've just copied both the noise and flanger machines to make a duplicate synthesizer. I do that a lot with tracks on the Mono, usually panning them, to create a bit more depth.

==

Re:Karplus Strong synthesis in the Monomachine
Posted by xheindrichs - 2009/12/31 21:34
_____

Okay, but, it sounds like radically different from previous sounds... For example, tempo seems to be faster, and sounds seems to have benn tweaked "violently"!

Bye

Xa

==

Re:Karplus Strong synthesis in the Monomachine
Posted by GYS - 2009/12/31 23:04
_____

Really cool stuff. You are quite creative with your gear! :cheer:

==

Re:Karplus Strong synthesis in the Monomachine
Posted by futureimage - 2010/01/01 00:21
_____

xheindrichs wrote:
Okay, but, it sounds like radically different from previous sounds... For example, tempo seems to be faster, and sounds seems to have benn tweaked "violently"!
I think it was a different pattern but it's still using the Karplus Strong core duplicated:

The tempo is indeed much greater.

The two KS engines are panned apart slightly.

There's Parameter Locking of the noise engine... I think that's what's creating the "violent" sound - bringing the decay out from zero into about 30 or even to 120 for noise bursts is quite an effective thing to do.

There's some P-Locking of the flanger's "internal" LFOs on both tracks.

Delay is added to both flanger tracks (filtered down).

The filter is working away on both flanger tracks, quite a short decaying envelope on the width. I think the Q is parameter locked quite a lot too though I'm not totally sure.

==

Re:Karplus Strong synthesis in the Monomachine
Posted by SenorFrio - 2010/01/01 03:18
_____

Thanks for this tip! Made some sick noises on the MnM last night! I haven't tried it, but will p-locking the delay on the Flanger "tune" the sound?

===

Re:Karplus Strong synthesis in the Monomachine
Posted by futureimage - 2010/01/01 03:20
_____

Yes, the Delay parameter on the Flanger acts as the pitch setting for this setup.

===

Re:Karplus Strong synthesis in the Monomachine
Posted by xheindrichs - 2010/01/01 22:52
_____

OK, that's more clear... I'm going to try ;)

Happy new year...

Xa

===

Re:Karplus Strong synthesis in the Monomachine
Posted by anselmi - 2010/01/02 00:14
_____

futureimage wrote:
Yes, the Delay parameter on the Flanger acts as the pitch setting for this setup.

so, a little triangle LFO could make a good vibrato I guess:)

===

Re:Karplus Strong synthesis in the Monomachine
Posted by futureimage - 2010/01/02 06:58
_____

Anselmi, you could just use the Flanger's internal LFO. ;)

===

Re:Karplus Strong synthesis in the Monomachine
Posted by anselmi - 2010/01/02 15:57
_____

futureimage wrote:
Anselmi, you could just use the Flanger's internal LFO. ;)

hehehe..right! more free LFOs to mess with other parameters!:)

===

Re:Karplus Strong synthesis in the Monomachine
Posted by stuartm - 2010/01/29 03:23
_____

Works fine with the MD!
Although, the delay time is not very fine resolution to make it tonal useful.

Some nice FX though, modulation delay time with an LFO + Delay Modulation itself.

==

Re:Karplus Strong synthesis in the Monomachine
Posted by Neeraj123 - 2010/02/08 13:25
_____

hiiiiiiiiiii
Sounds like some Ulver and Dntel but I still don't like everything being washed out in that thin Reaktor reverb.Ã¿

toyota truck steering box

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Re:Karplus Strong synthesis in the Monomachine
Posted by futureimage - 2010/02/09 02:11
_____

^lol @ adbots.

==

Re:Karplus Strong synthesis in the Monomachine
Posted by darenager - 2010/04/06 04:49
_____

Missed this thread before, so just adding my method here, looking foreward to trying some of the other methods too,
anyway here's a vid I did.

http://www.youtube.com/watch?v=cVRp7e6GQS4

Description on the video gives a rundown how to do it, I did not spend too much time refining it but anyway it gives you
an idea. I ran into a few different and interesting sounds such as plucked string, tabla type sounds and some nice FM
sounding percussive stuff. More a proof of concept than anything

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Re:Karplus Strong synthesis in the Monomachine
Posted by ThinkTanx - 2010/04/06 07:13
_____

:ohmy: :blink: This is quite fun! :laugh:

==

Re:Karplus Strong synthesis in the Monomachine
Posted by Nobl1v1on - 2010/04/06 11:08
_____

Wowzers that is some crazy fun stuff, I have been using SWAVE>SAW with an arp at speed of X6 in key mode with
Random Play and a two octave range... really getting some great results, thanks for the info

lars

==

Re:Karplus Strong synthesis in the Monomachine
Posted by GYS - 2010/04/06 12:01
_____

darenager wrote:
Missed this thread before, so just adding my method here, looking foreward to trying some of the other methods too,

anyway here's a vid I did.

http://www.youtube.com/watch?v=cVRp7e6GQS4

Cool vid! I shall try this on the MD. Makes me think that Mr. Hawtin was using that synthesis technique on Disconnect my Brain for that weird ping pongy blip that goes throughout the track.

==

Re:Karplus Strong synthesis in the Monomachine
Posted by Psykisk - 2011/04/04 11:59
_____

I know that this thread is over a year old but I wanted to report that this works just as well with the OT. I sampled the noise machine from the MD and am getting results similar to what I remember getting with the MNM. :)

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