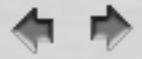## Introduction - The Idea of Time Freezing.

Infinite sound... Did you ever want to stop a sound just like a snapshot, so that it stays forever, without looping effects and without sounding like a synthesizer? I found a solution. Here it is: the TimeFreezer that freezes all kind of audio material and plays with it.
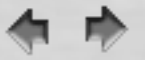
Analysis and Resynthese.

Searching in all available Plugins and software in the world I couldn´t find a tool that provides this in such high quality. I found a way of making an analysis of the sound and resynthesis that sounds so near to the original. And it is fast: depending on your system you will get a response within a few miliseconds.

Two versions of TimeFreezer:

The first version is an instrument that browses through a sound file. You can see the wave, place your cursor on a moment and immediately hear what it sounds like. After you can manipulate it with basic parameters like pitch, volume, bandpass filter, denoiser and the analysis size. The description of the instrument is to be found here.

The second is a life effect. Instead of reading from a file it analyses the sound input of whatever you feed it with. This can be again any kind of audio material, like an instrument, a noise, a full orchestra or a sound scape of your choice.
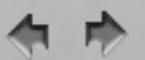
The software realisation is now made with the VST technology from Steinberg. This means that it is a plugin that you can use in every host that supports VST. If you need a stand alone version, there is also the possibility of loading it in a freeware VST-host like for example Tobybear Minihost (donation ware) or the VST host from Hermann Seib (freeware). Both hosts load exactly one plugin, wich is perfect for using the TimeFreezer in a session. But it has also been tested with many other commercial hosts like those: Steinberg Cubase and Nuendo, Ableton Live, Fruity Loops, Audiomulch, EnergyXt, Sonar and ohers. For now there are no known compatibility problems.

Since January 2008 the "Audio Units" for Mac OSX version is running. This means that you can now use the TimeFreezer with hosts like Logic, Garagaband, AU-Lab and many others.

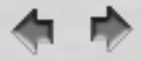Platforms: Windows (2000/XP/Vista) and Mac OSX (All), Universal Binary (MacIntel & PowerPC)
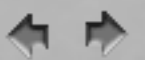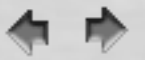
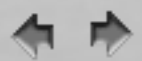The basics of the TimeFreezer VST Effect

The TimeFreezer VST Effect is not like most of the others. The basic idea is a resynthesis of an analysed sound. You can compare it with a combination of infinite sustaining and wha-wha. The reason why is, that in one way it prolounges the input sound indefinitely just like the sustain effect used to to with guitars in the past, and in another way it is morphable with a nice bandpass filter. The main difference - and this is what is new - is that it freezes any kind of audio material, not only single notes or chords. The TimeFreezer effect also listens to MIDI, so that the buttons can be controlled by any kind of MIDI device, for example a sustain pedal for the freezing start and a VR-pedal for the modulation. It´s parameters can also be controlled by a standard MIDI keyboard with Pitchbender and modulation wheel. Of course any movement can be automated by your VST automation software. For more about controlling see the MIDI controlling section.

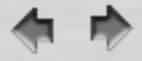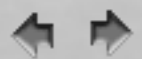And now a short description of every controller follows.
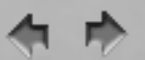
max - with this button set you will have a maximized output of the resynthesized sound in any case there is a signal. No distortions are possible. This sound then directly goes into the filters.
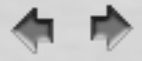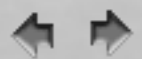
size - this is the size of the analyze window; the range is from 500 samples to 1.5 seconds at 44.100Hz.
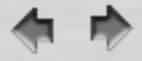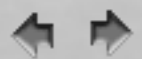
the FREEZE button - here you trigger the starting and ending of the TimeFreezing process. Note: it is always the last incoming signal that gets frozen.
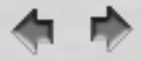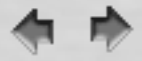
morph time - this defines how fast the transitions between the settings are going; from 1/100s to 10s. This parameter affects the morphing time of all the others!
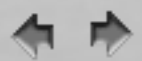
denoiser - this gives you the possibility of taking away the part of white noise of your source. If you put the level on very high, this will also grab out important parts of your sound, wich might be interesting for those who work with electronic experiments.
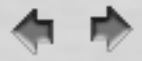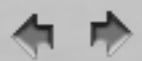
frequency - if "resonance" is not set to zero, this will be the center of the band pass filter; the range is from 20 to 20.000Hz. (the response is slowed down by "morph time")
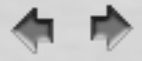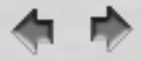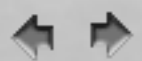
resonance - this is the size of the just described band pass filter; this is a substractive filter, so that you never get distortions. (the response is slowed down by "morph time").
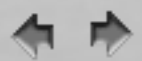
pitch - this repitches the output; the range is +/- one octave (the response is slowed down by "morph time"). The amplitude is customizable in the TimeFreezerFX.ini.
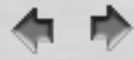
mixer input - this lets you set the volume of the original filtered signal. If you have a low latency in your system, then you can use the TimeFreezer output as your only output for filtering and modulating it in real time.
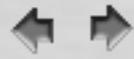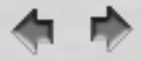
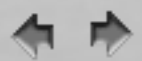mixer freeze - the TimeFreezer signal volume can be adjusted here.

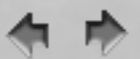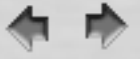These versions of the TimeFreezer were made with Steinberg Virtual Studio Technology.

The TimeFreezer effect exists in two versions: mono and stereo. Sometimes "mono" is sufficient, and it uses less memory and calculates faster. The AU version switches automatically.
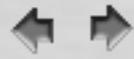
the TimeFreezer logo

Physical Music is a group of musical software related to physics. TimeFreezer is the first official release.

the author - Marc Lingk

MIDI Implementation

In case you dont want to setup your host for configuring MIDI controlling, some MIDI are preconfigured, so that you can immediately use it in your environment.

Pitchbend controls the pitch .

Modulation Wheel (ctrl#1) controls the resonance.

"Volume control" (ctrl#7) controls the freeze volume.

Sustain Pedal (ctrl#64) controls the FREEZE switch.

In the configuration-file you can set your own MIDI-controller numbers:

```
Don't modify the structure of this file, just change the values if you want.

denoiser:              ctrl 10 chan 9;
window size:           ctrl 10 chan 10;
fade time:             ctrl 10 chan 11;
filter frequency:      ctrl 10 chan 12;
filter resonance:      ctrl 10 chan 13;
pitch:                 ctrl 10 chan 14;
input vol.:            ctrl 10 chan 15;
freeze vol:            ctrl 10 chan 16;

pitchbend range: 12;
```

in Mac you find this file here: /Users/Shared/TimeFreezer-settings
in Windows you find it beside of the dll. I ts named TimeFreezerFX.ini