Software 2 WS 2016 #10

Chikashi Miyama

Hörübungen

Farben des Rauschens

Violet

Pink

Blue

Brown (red)

White

Farben des Rauschens

Violet

Pink

Blue

Brown

White

Multiple Wavetable Synthesis

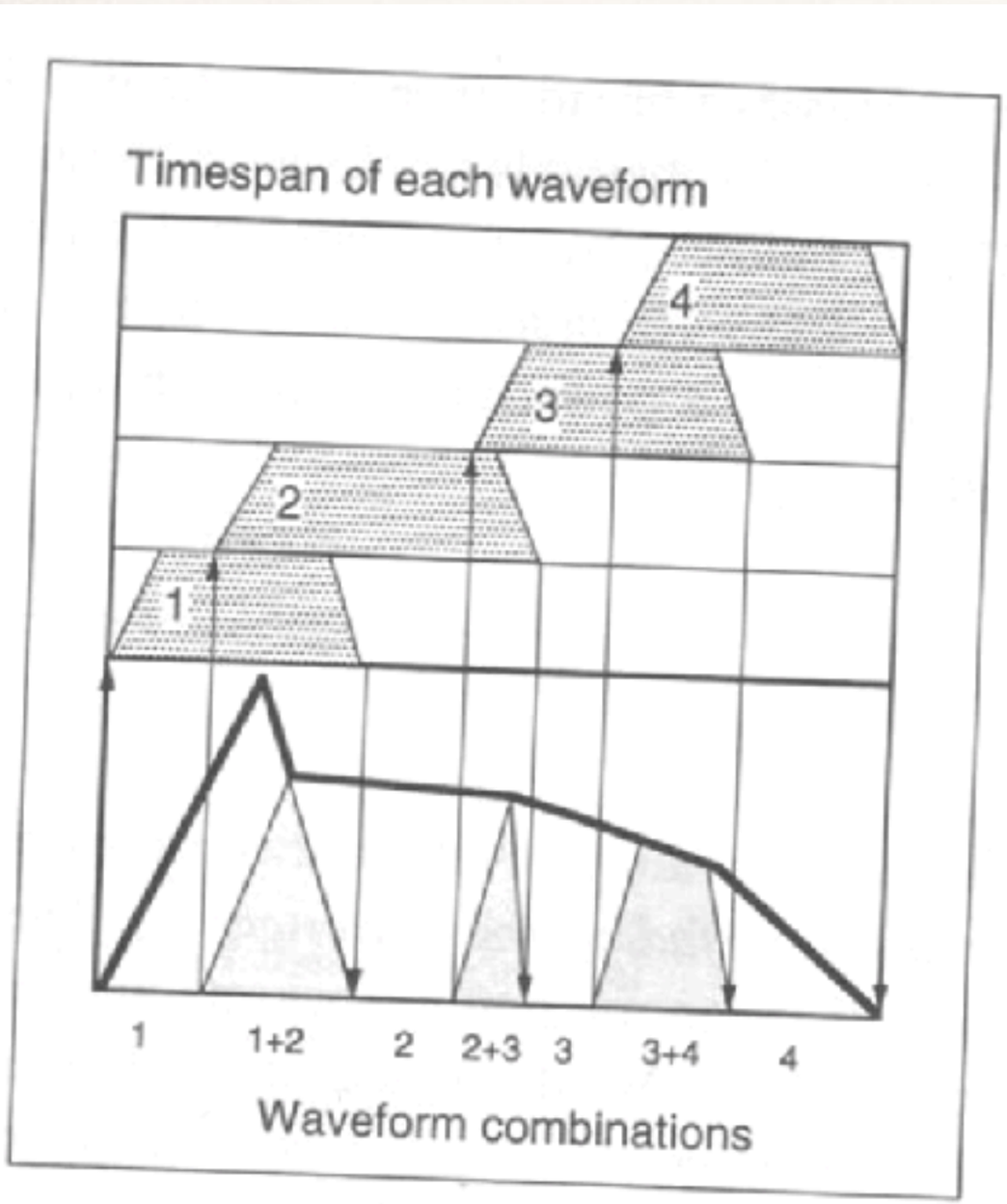
Multiple Wavetable Synthesis

- Definition?
- Motivation?
- Vorteil?
- Mechanismus?

Wavetable Crossfading

Prophet VS (1985)

Crossfading



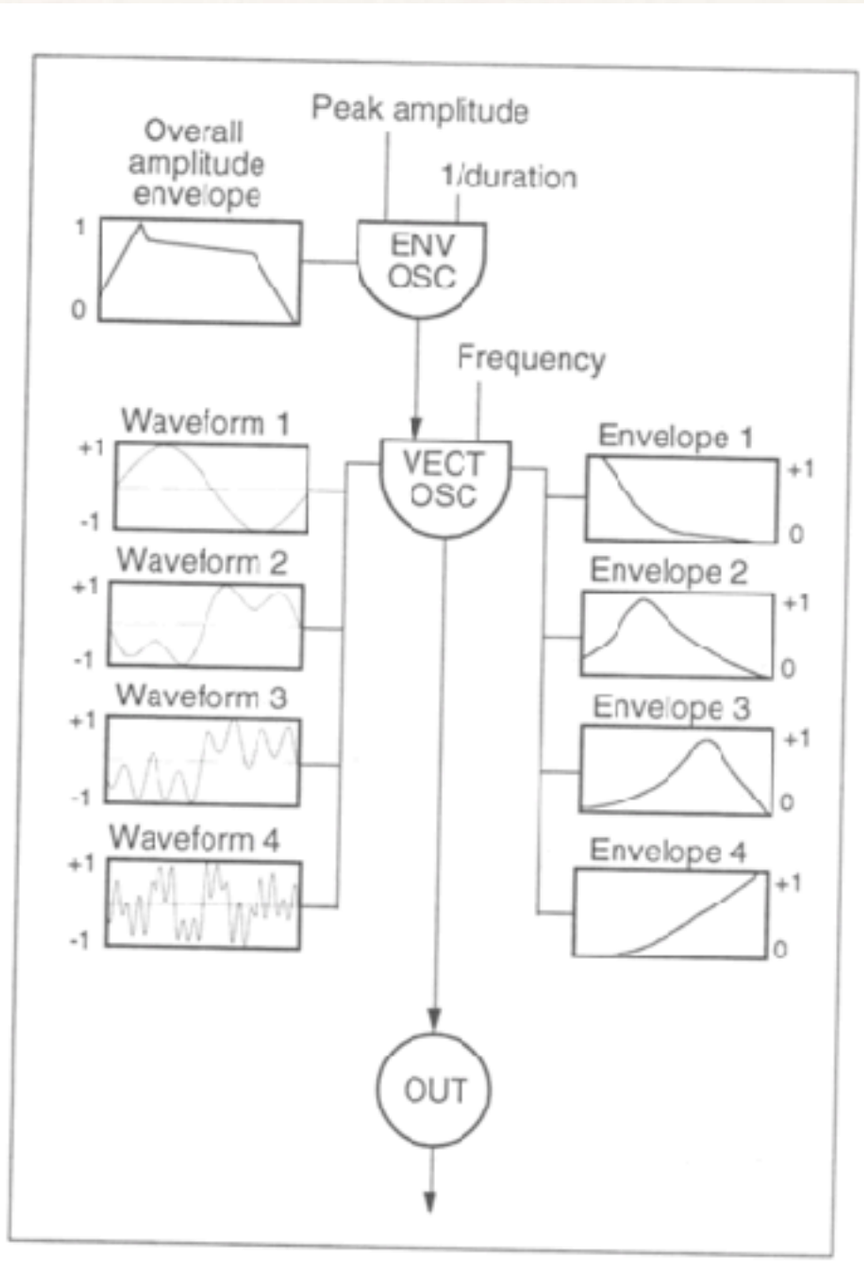
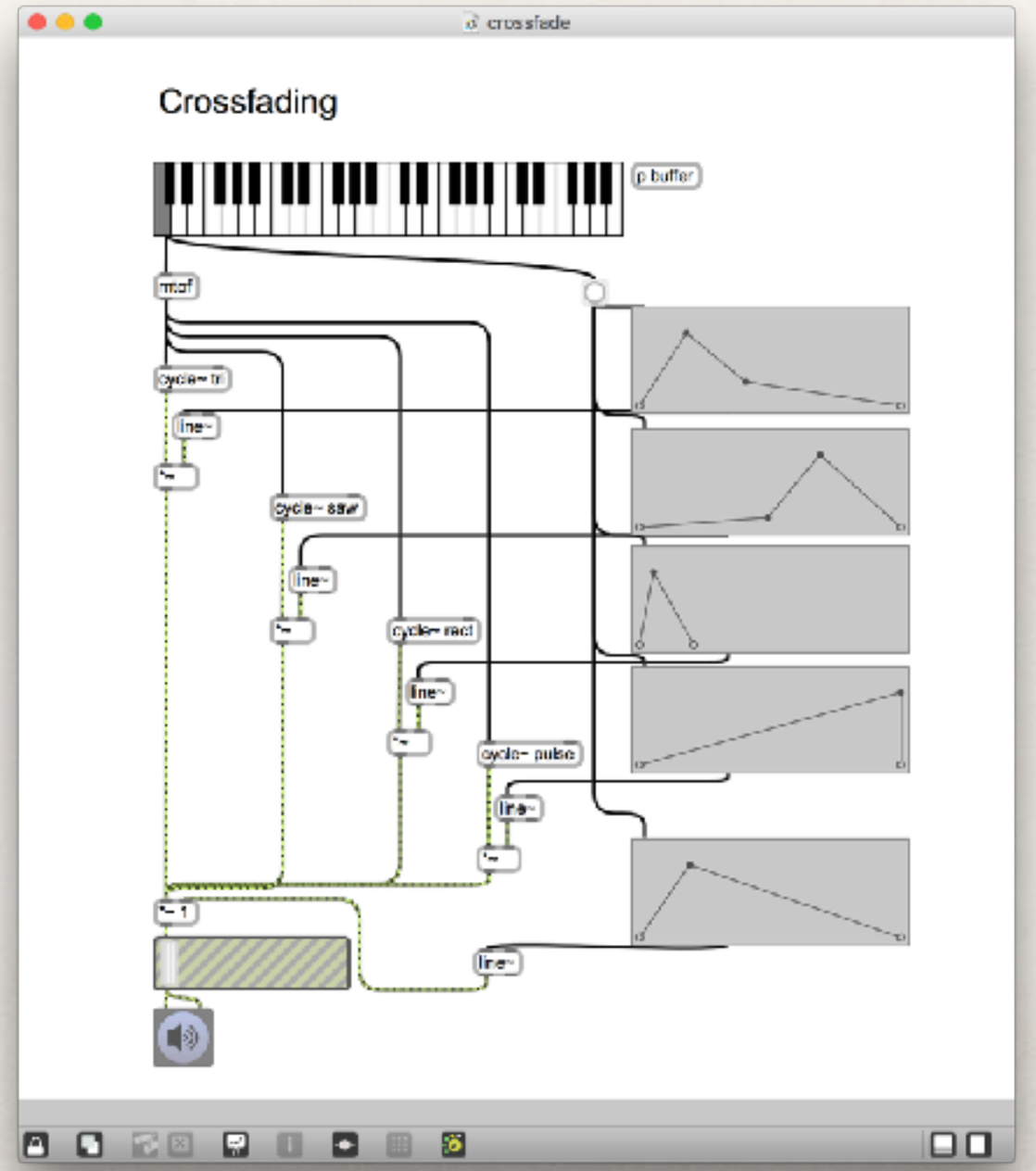


Figure 5.2 Wavetable crossfading (vector synthesis) instrument using four wavetables. Each envelope on the right applies to a wavetable on the left.

Experiment mit Max



Wavestacking

Wavestacking

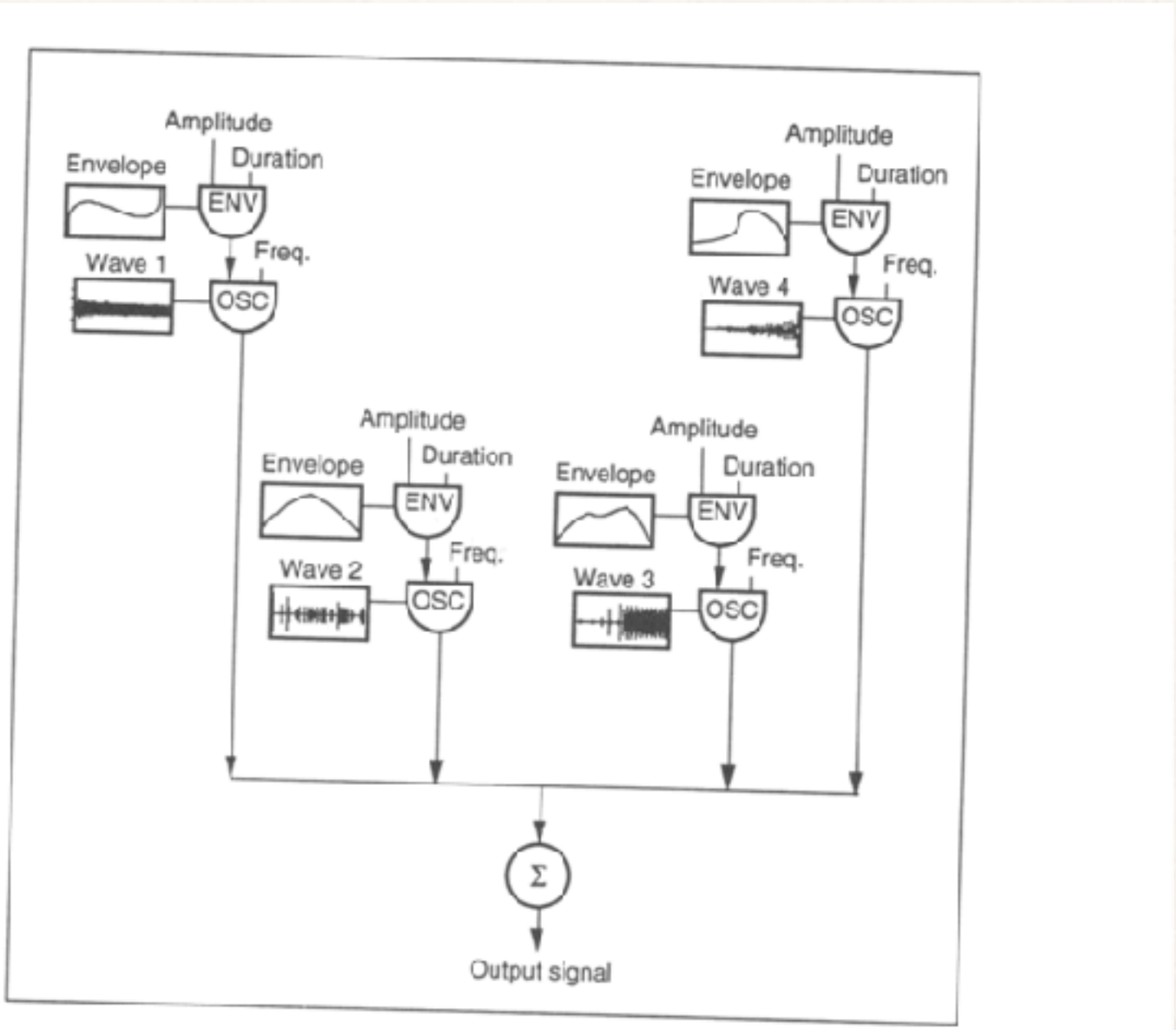
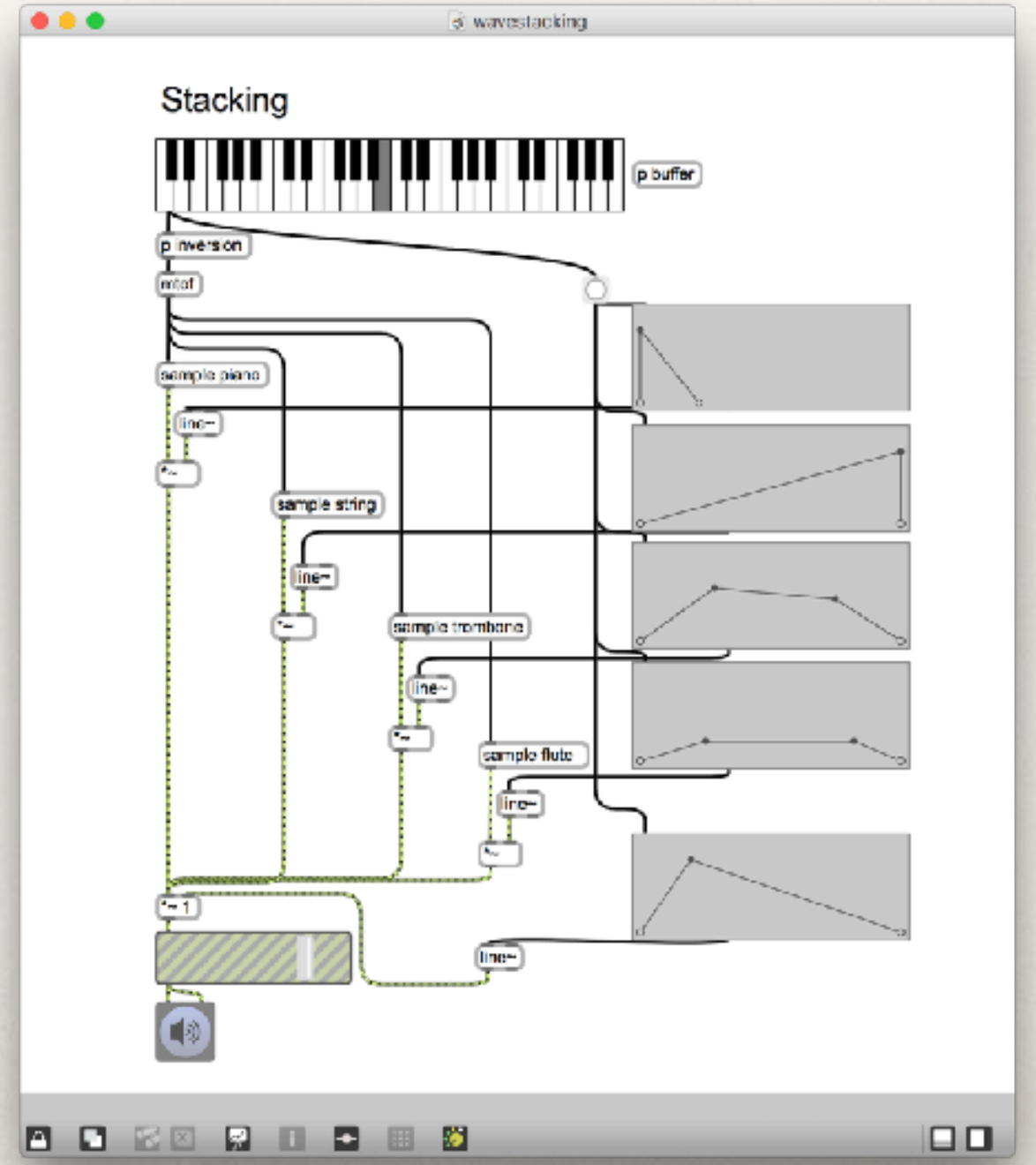


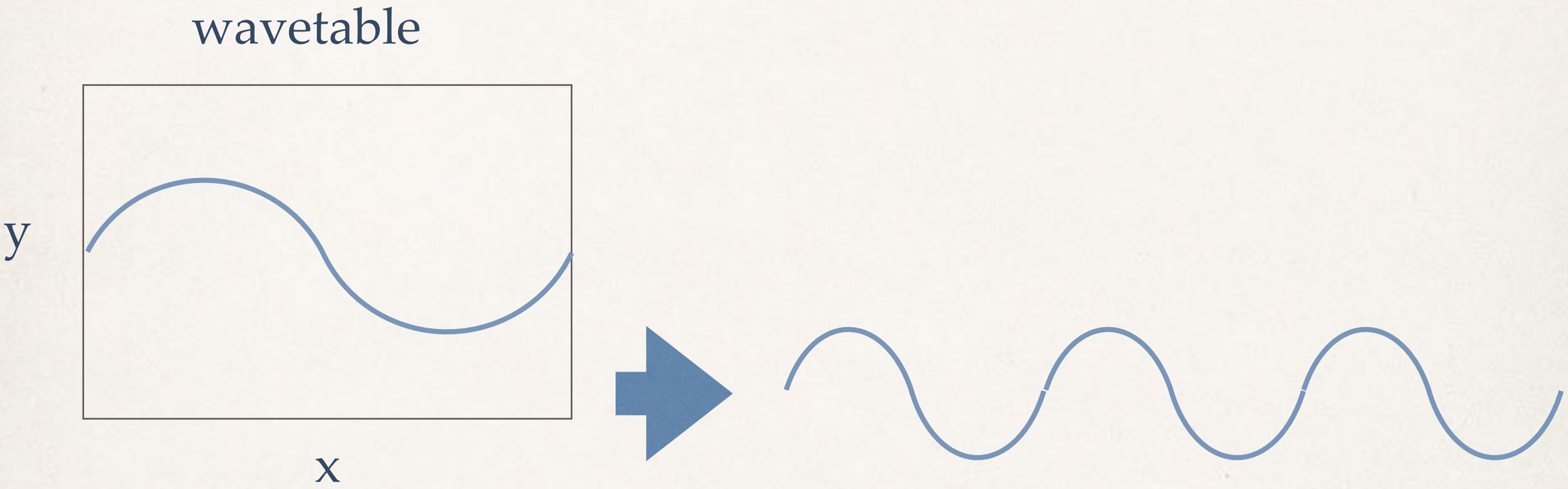
Figure 5.5 Wavetable stacking. The signals from four oscillators added together. Notice that the wavetables contain not simple periodic functions but long sampled sounds.

Experiment mit Max



Wave Terrain Synthesis

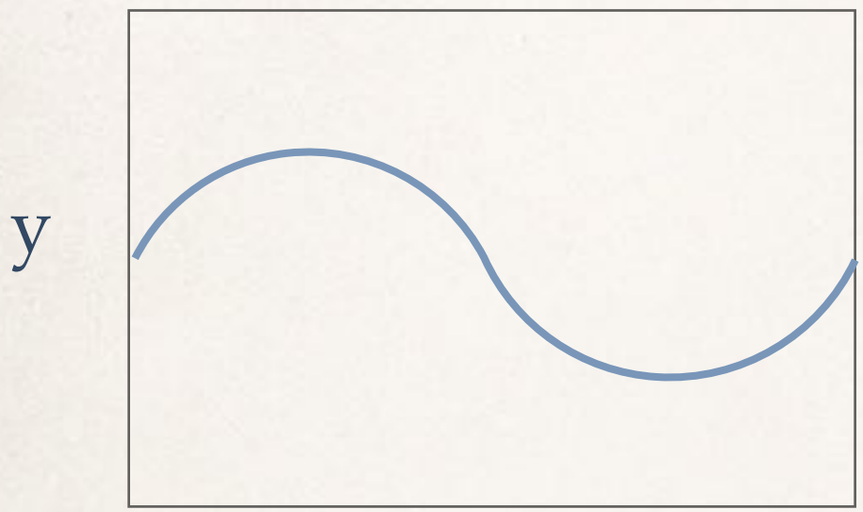
Wavetable synthesis

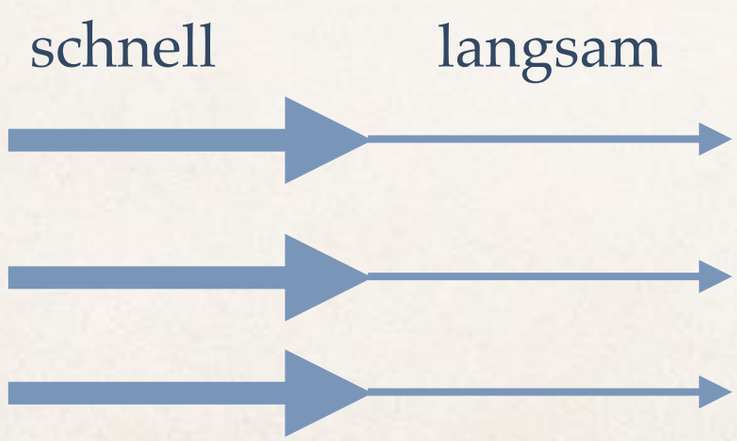


phasor

( ) synthesis

wavetable

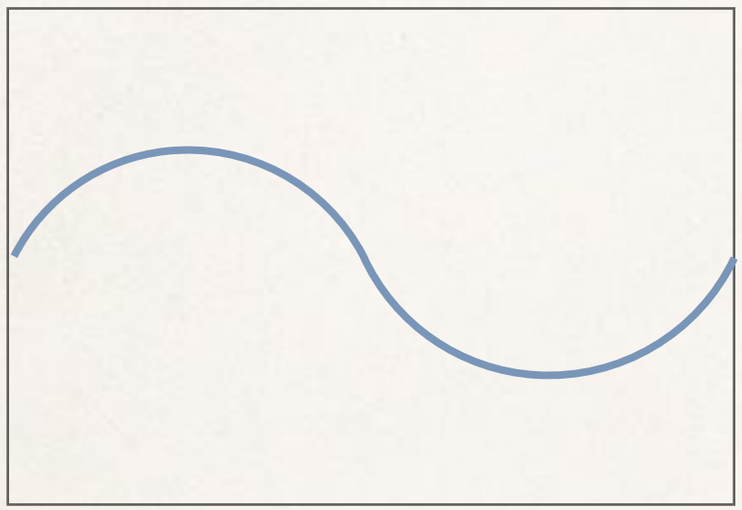




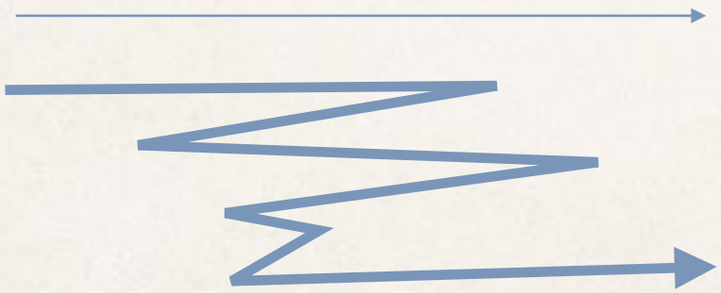
phasor

Weitere Möglichkeiten

wavetable

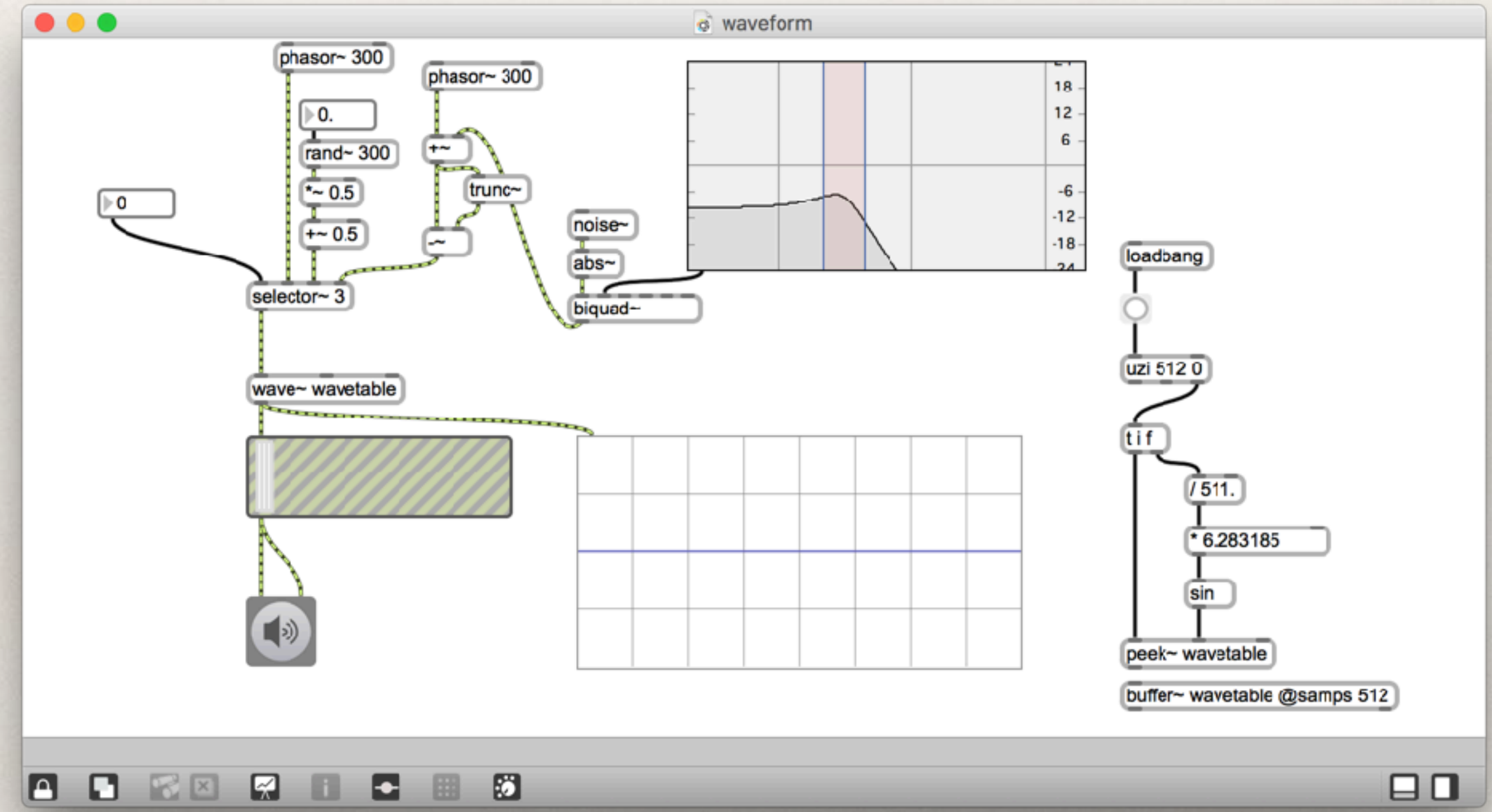


komplexes Signal



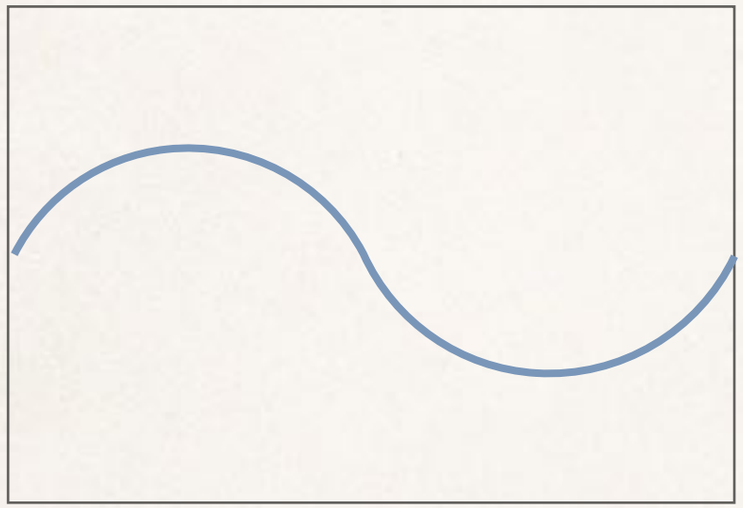
random walk

Experiment mit Max



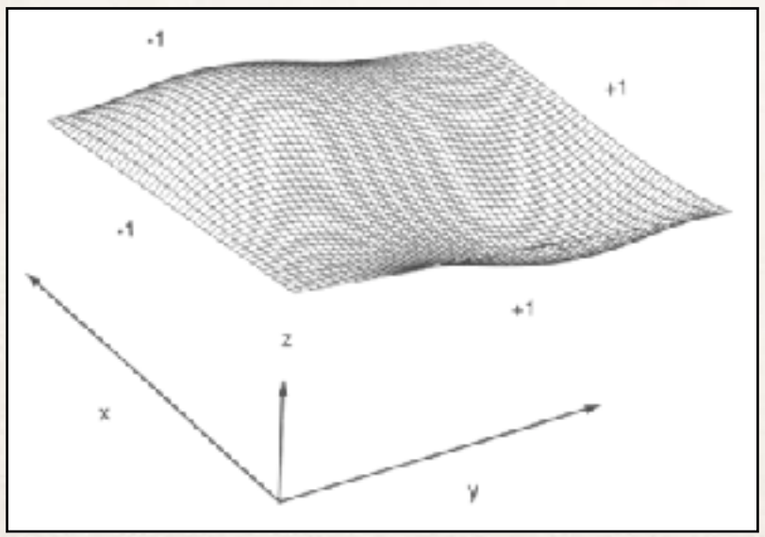
Wave Terrain

2D



ein Werte

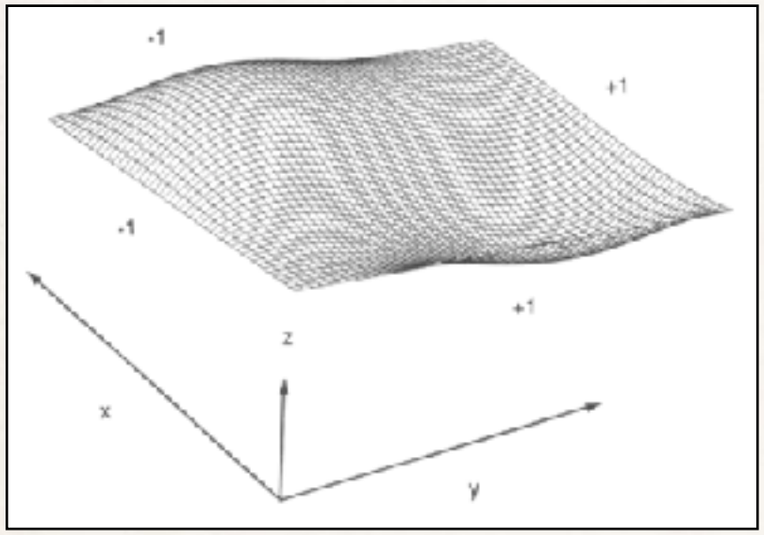
3D

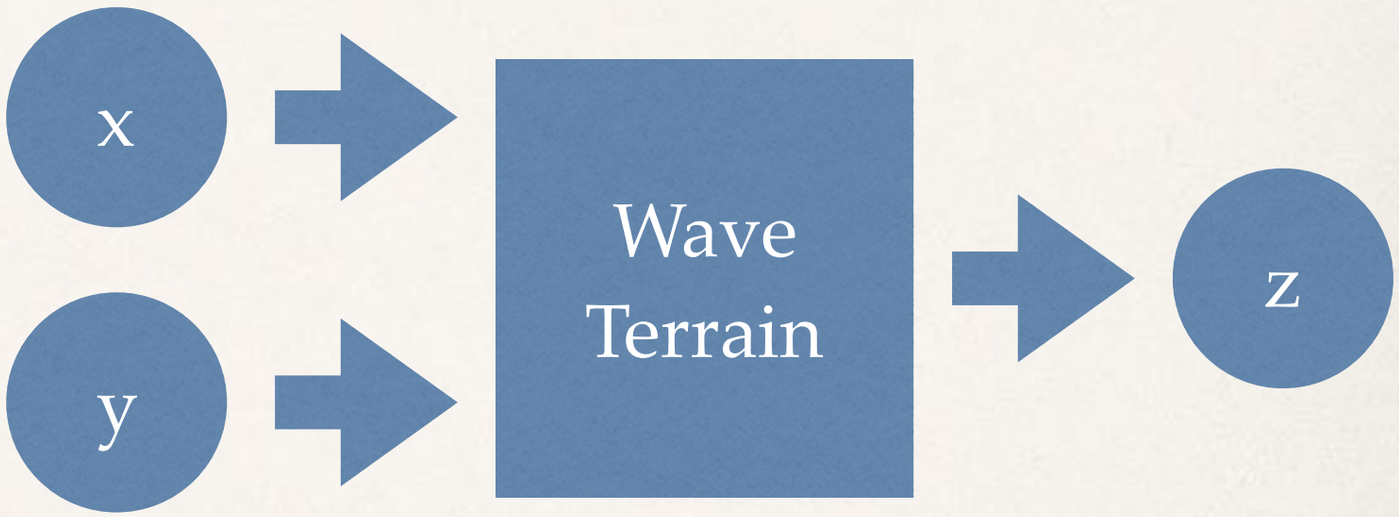


zwei Werte

Wave Terrain

3D

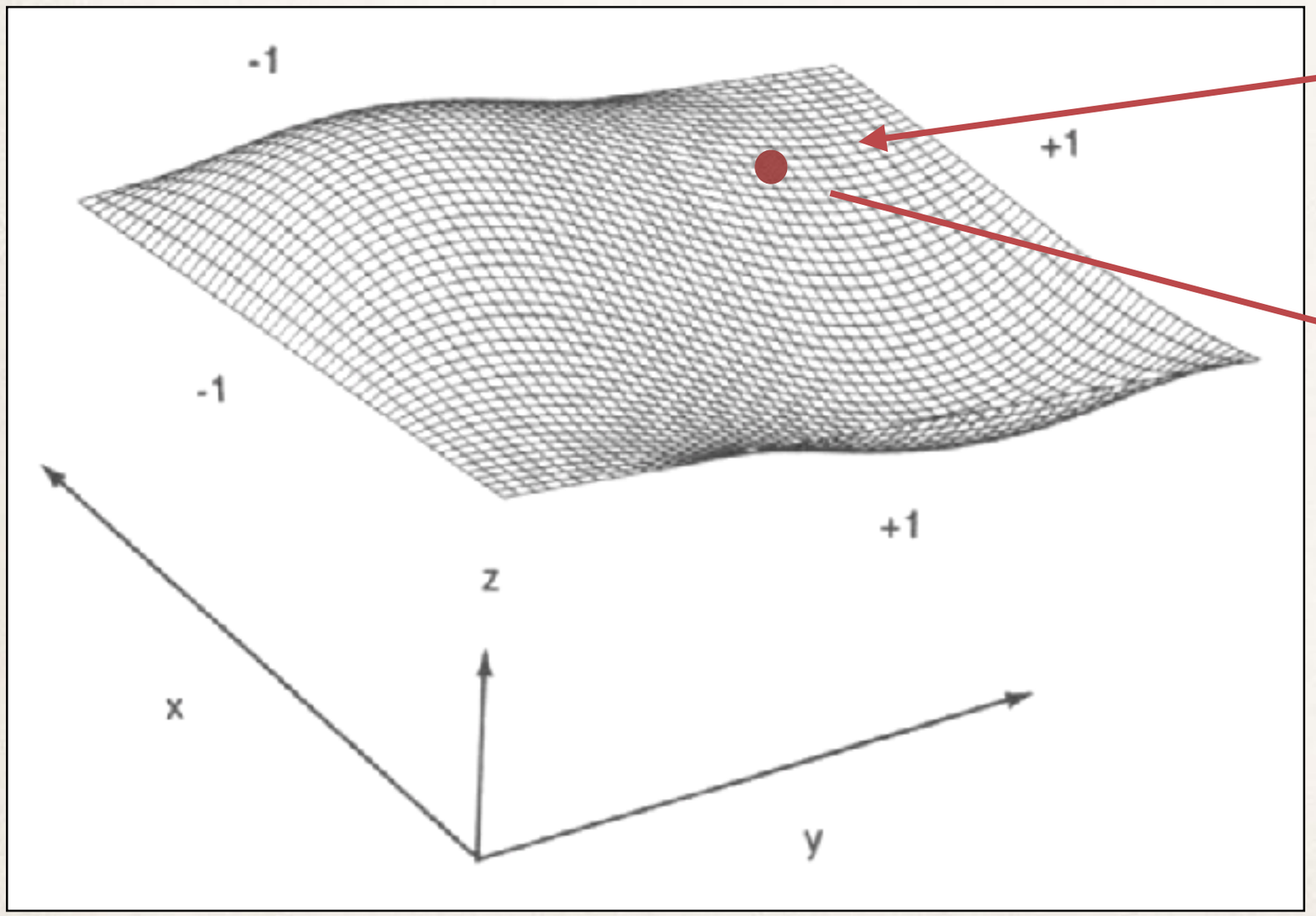




zwei Werte

Wave Terrain = Two variable function synthesis

Wave Terrain



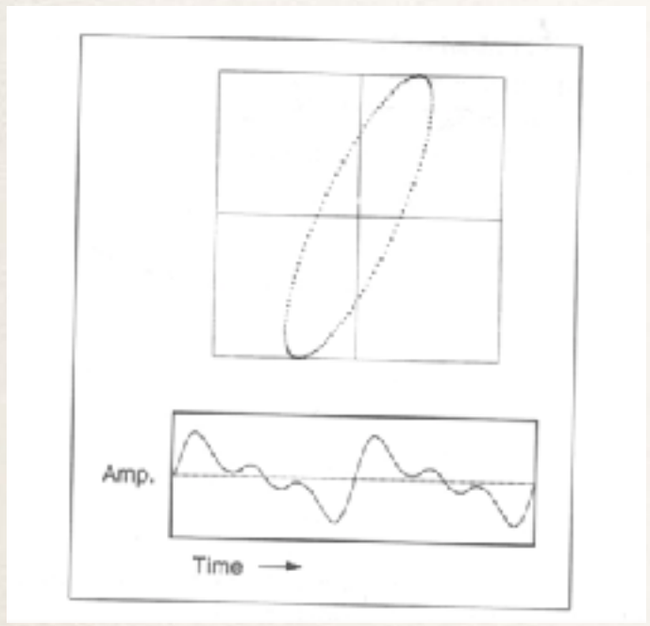
x y

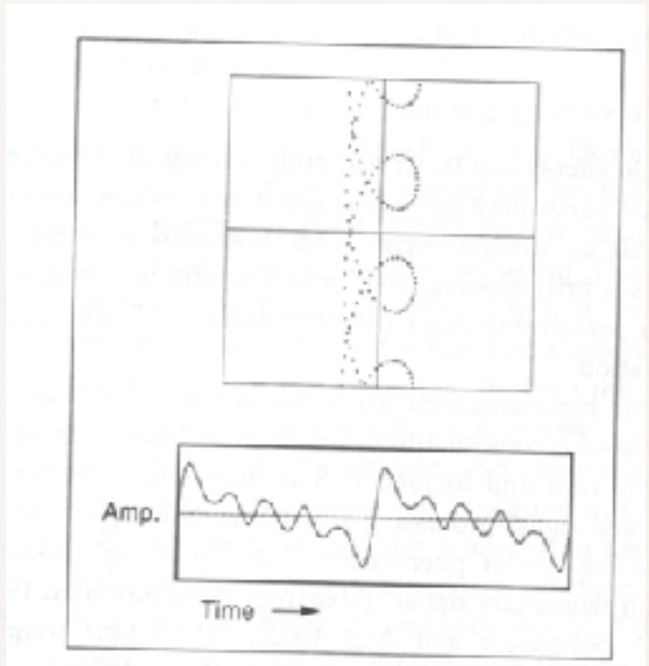
(-0,2 0,5)

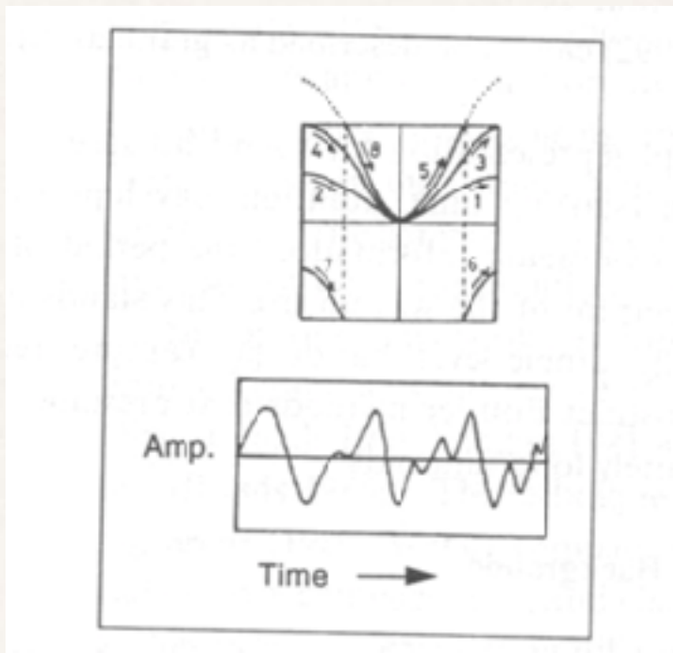
z

0,05

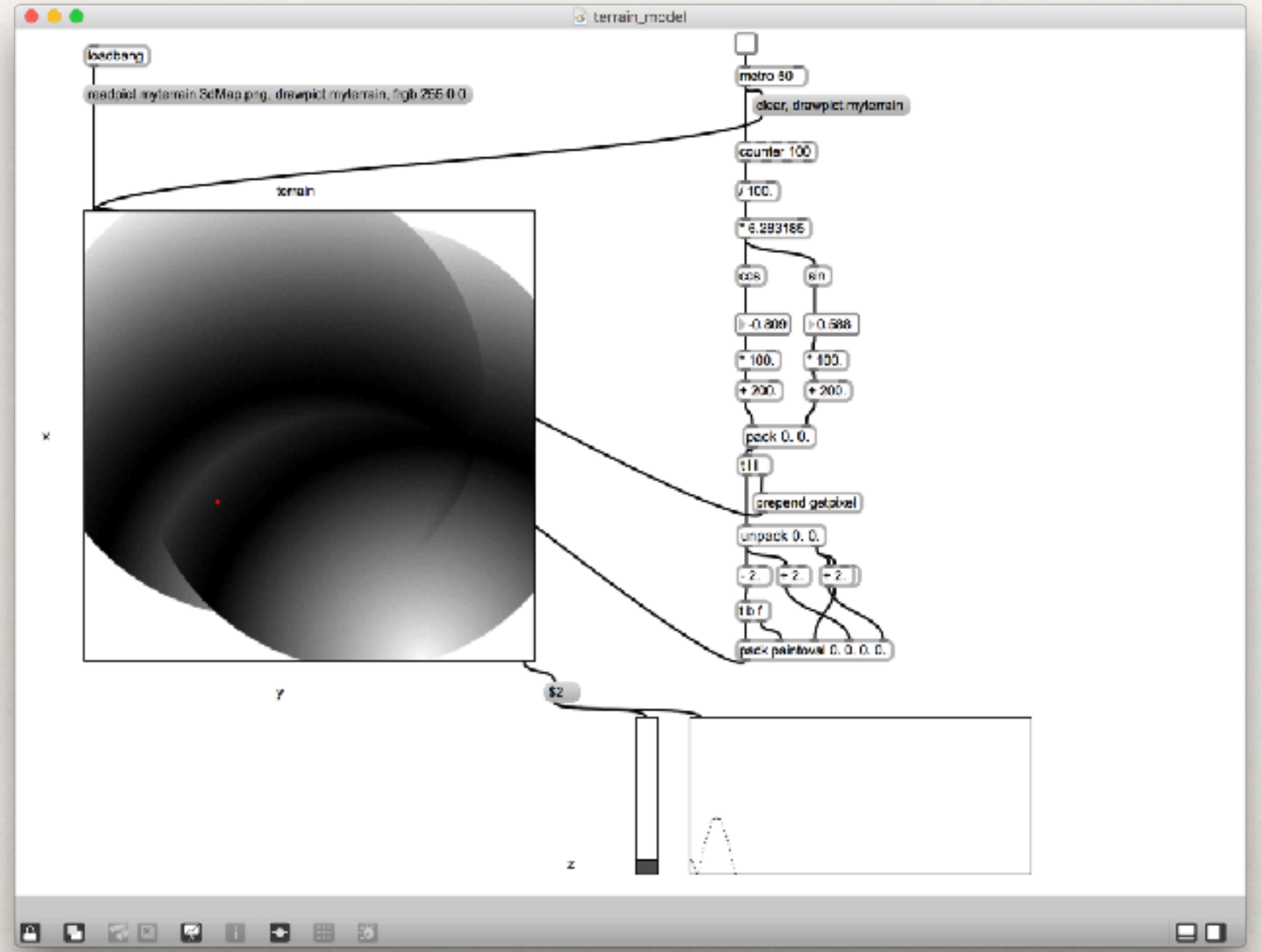
Orbits







Experiment mit Max



Time-varying Subtractive Synthesis

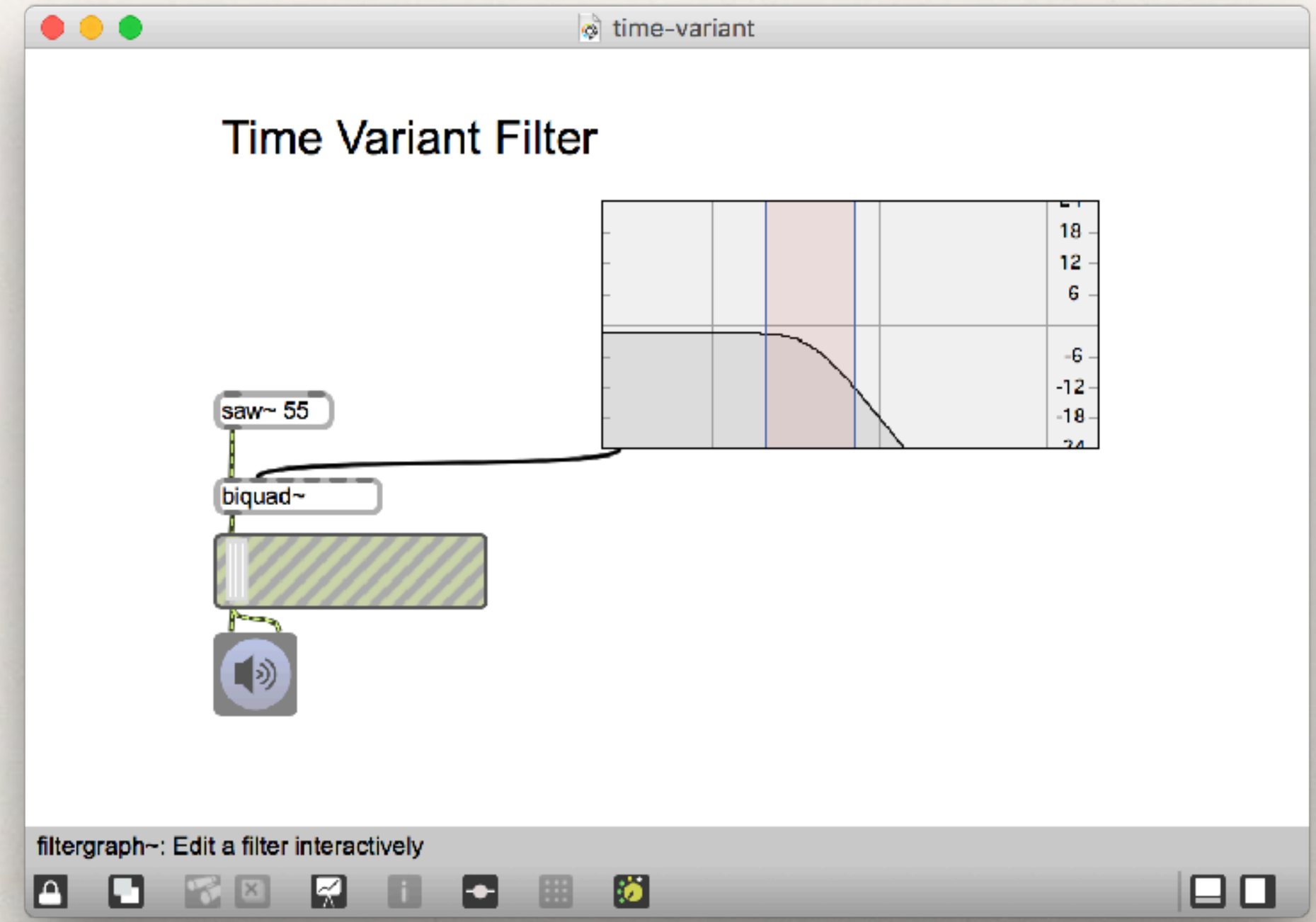
Filter: Zwei Typen

- ?
- ?

Filter: Zwei Typen

- Fixed
- Time Variant

Experiment mit Max



SYTER

A prime example pf a system for time-varying subtractive synthesis is the SYTER - a digital signal processor developed in the late 1970

GRM TOOLS

http://www.inagrm.com/grmtools

Vocoder

Vocoder

Roland VP-03

https://www.youtube.com/watch?v=ysEJcsKs06Y

Mechanismus

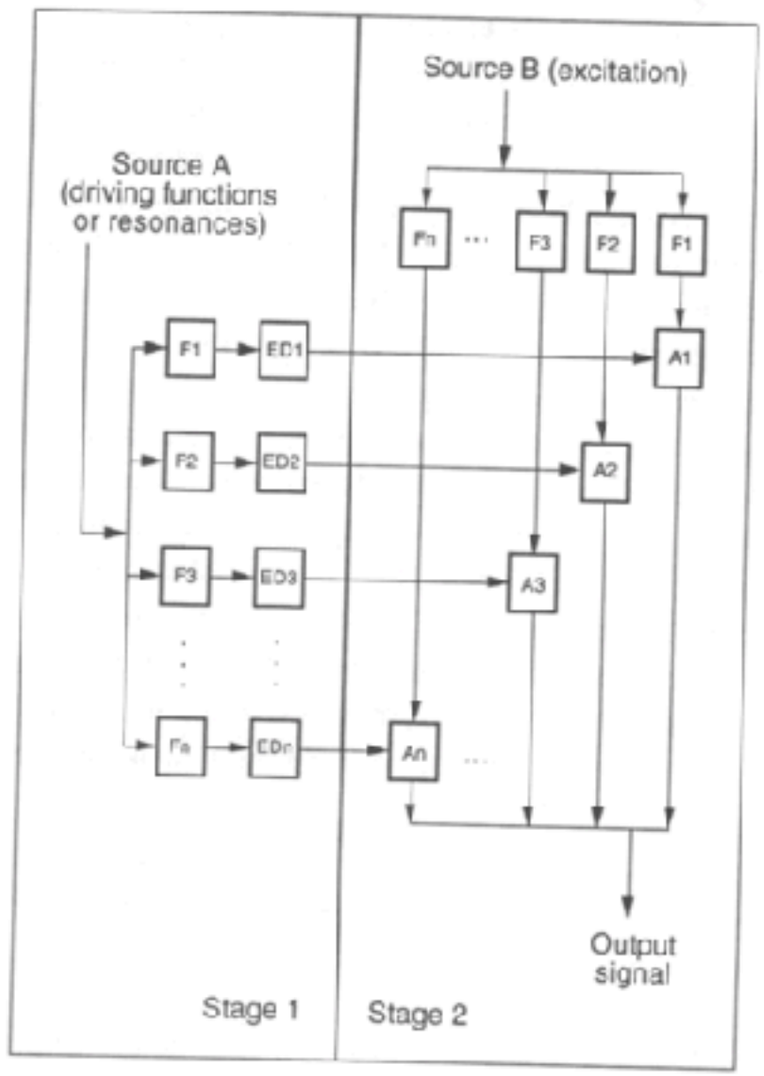
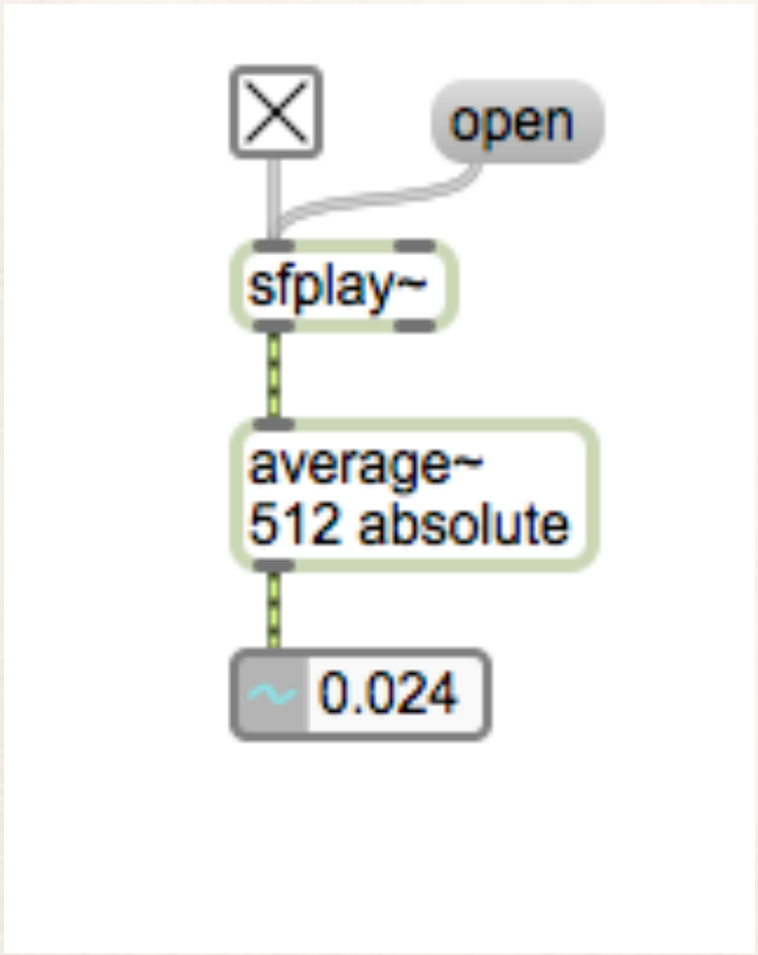


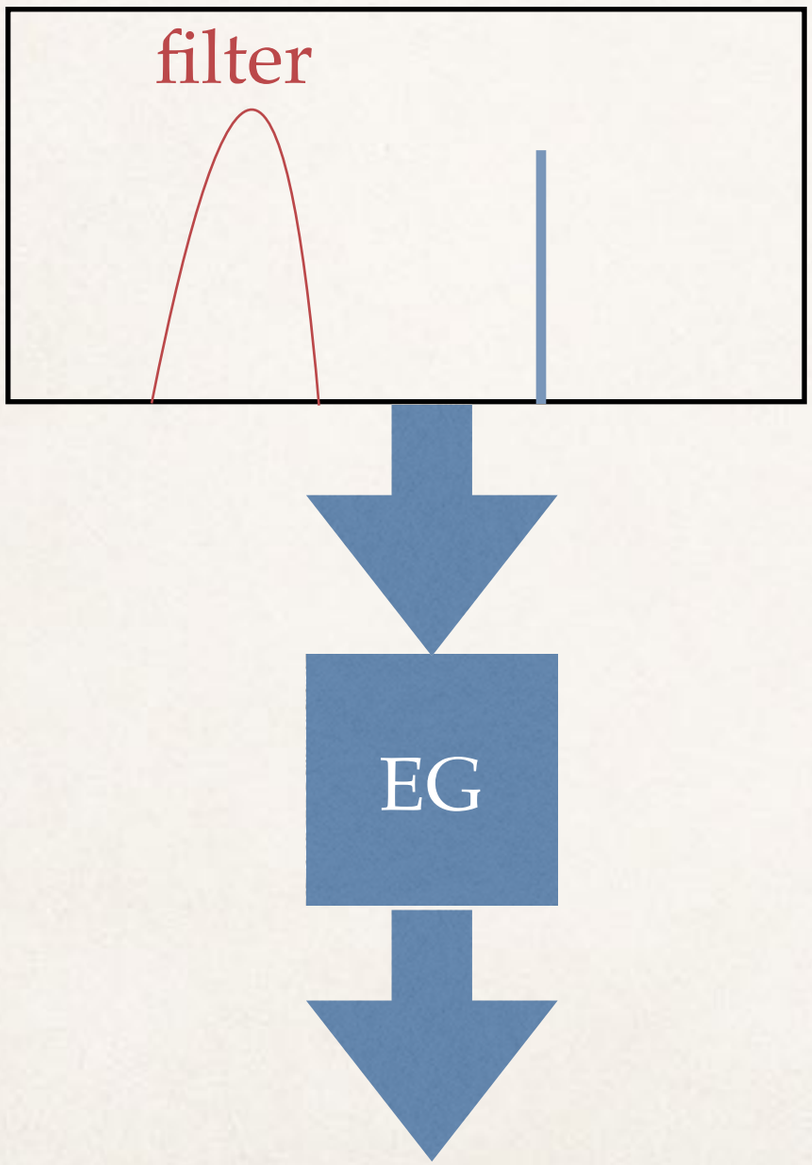
Figure 5.33 Vocoder. Stage 1 is the analysis part, and stage 2 is the synthesis. "F" stands for filter, "ED" stands for envelope detector, and "A" stands for voltage-controlled amplifier—an amplifier whose gain is determined by a control voltage fed into it from the envelope detector. The same structure can also be realized in digital form.

Experiment mit Max

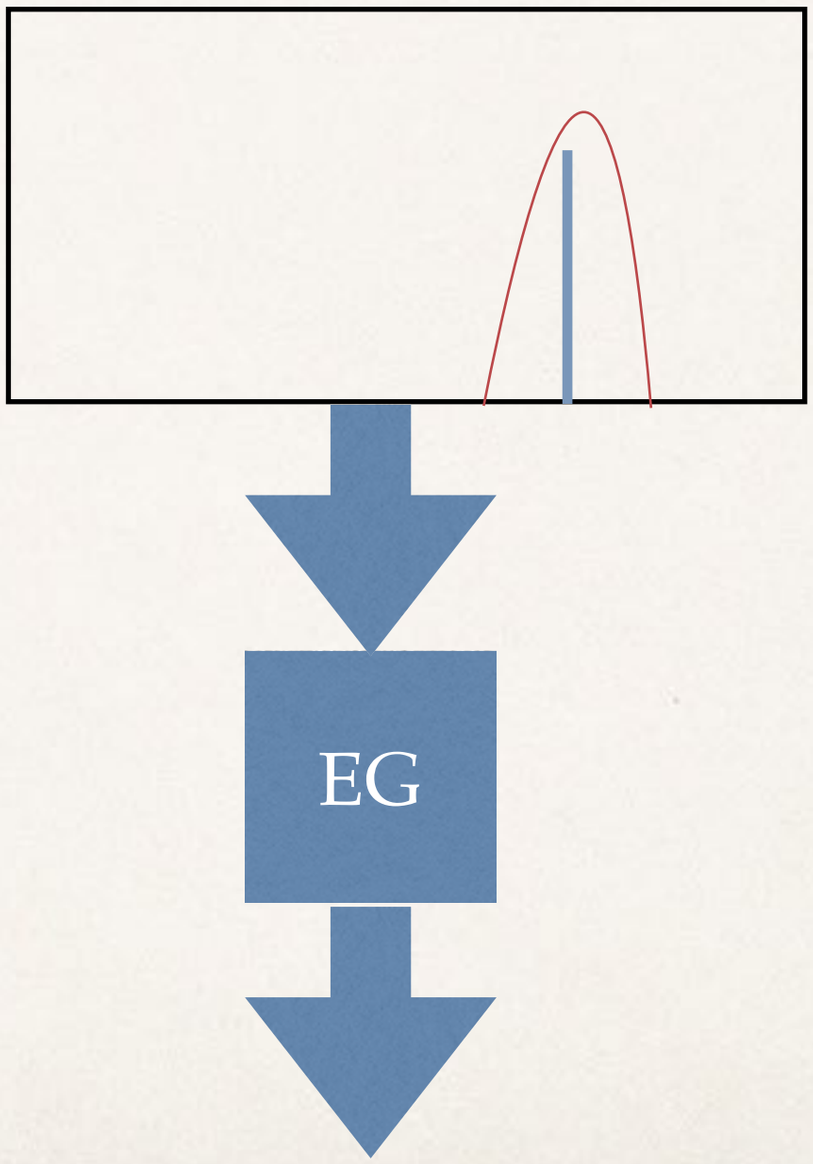


Envelope Detector

Experiment mit Max

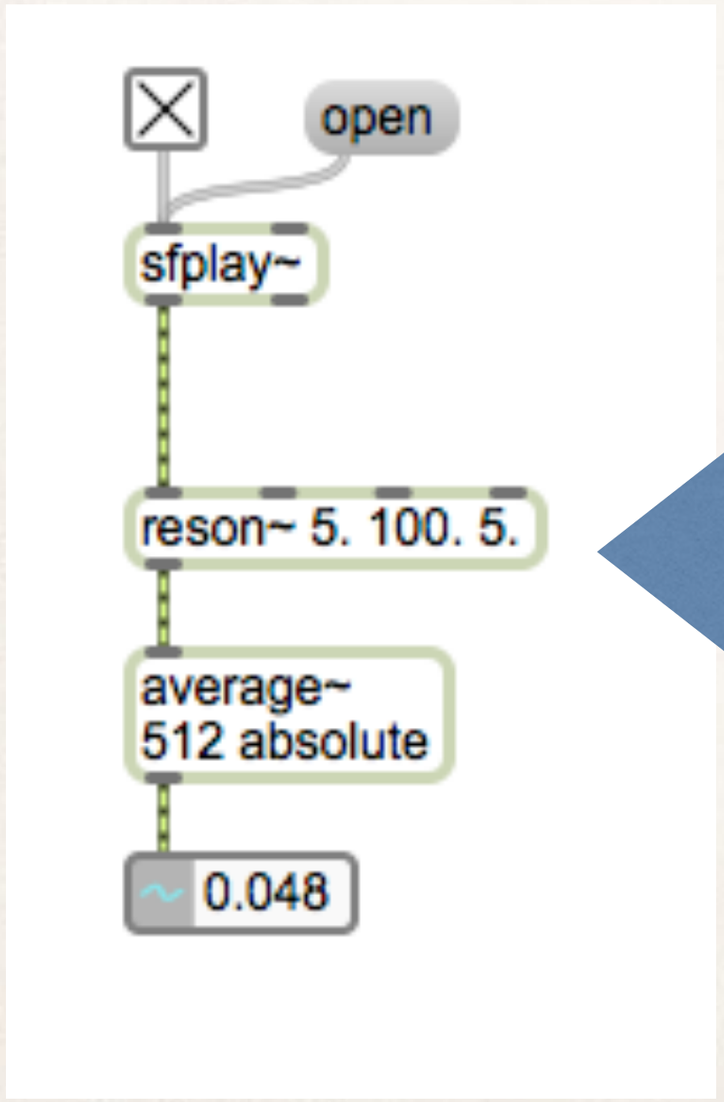


0



0,557

Experiment mit Max

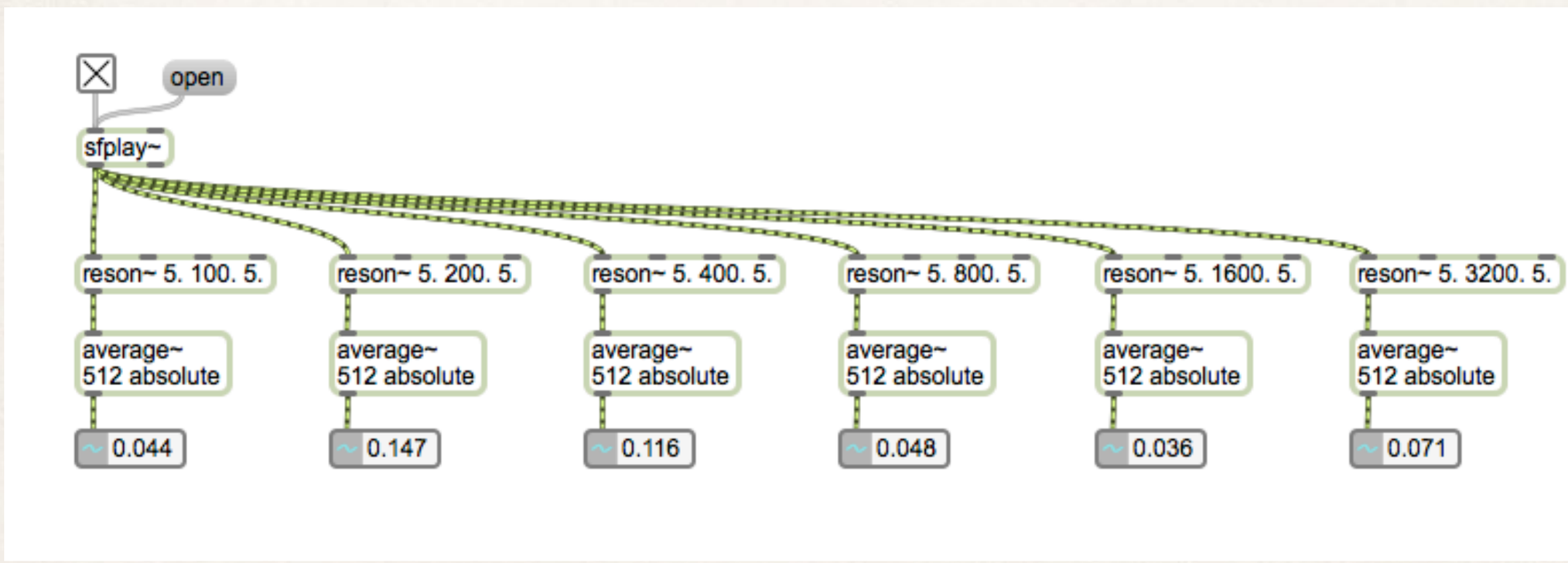


Bandpass

Envelope Detector
(nur ca’ 100 Hz.)

Experiment mit Max

Mehrere Envelope Detectors



Experiment mit Max