Software 2 WS 2016 #8

Chikashi Miyama

Hörübungen

A

B

C

D

E

F

Hörübungen

A	Karplus-Strong
B	Modal
C	Phase Distortion
D	Waveform Interpolation
E	Waveshaping
F	Sawdust

Hörübungen

Original

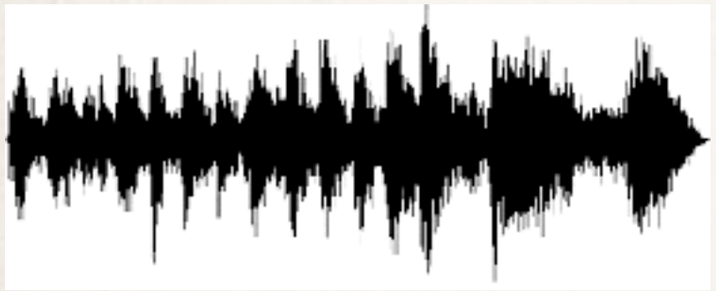
(Constant) Interpolation

(Linear) Interpolation

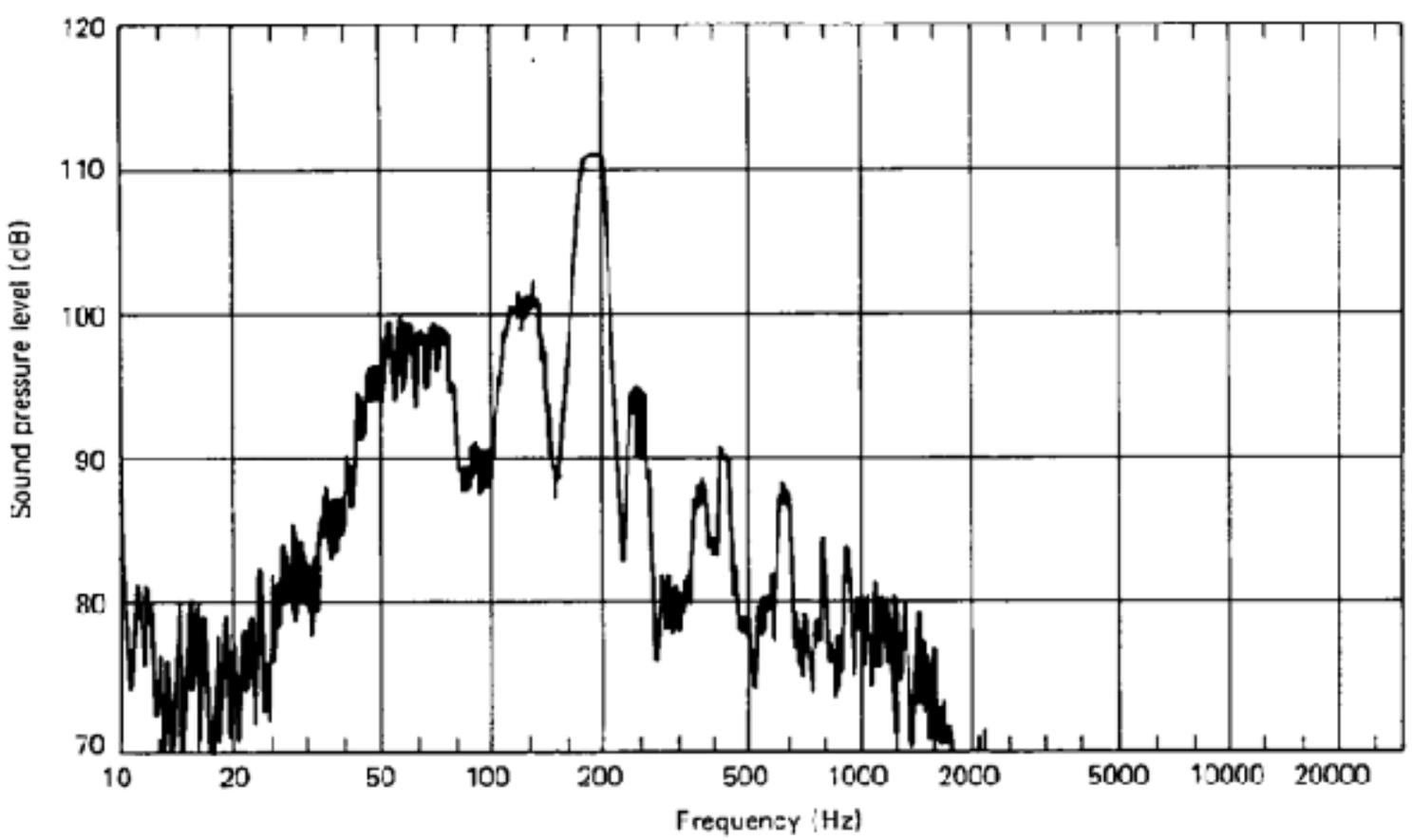
Sonifikation und Visualisierung

Visualisierung

Visualisierung



Waveform



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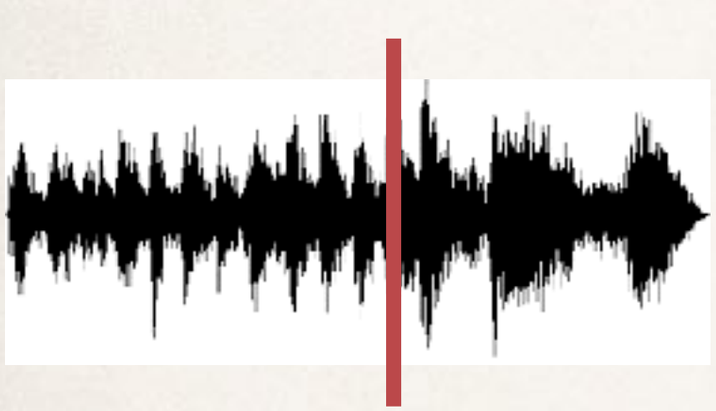
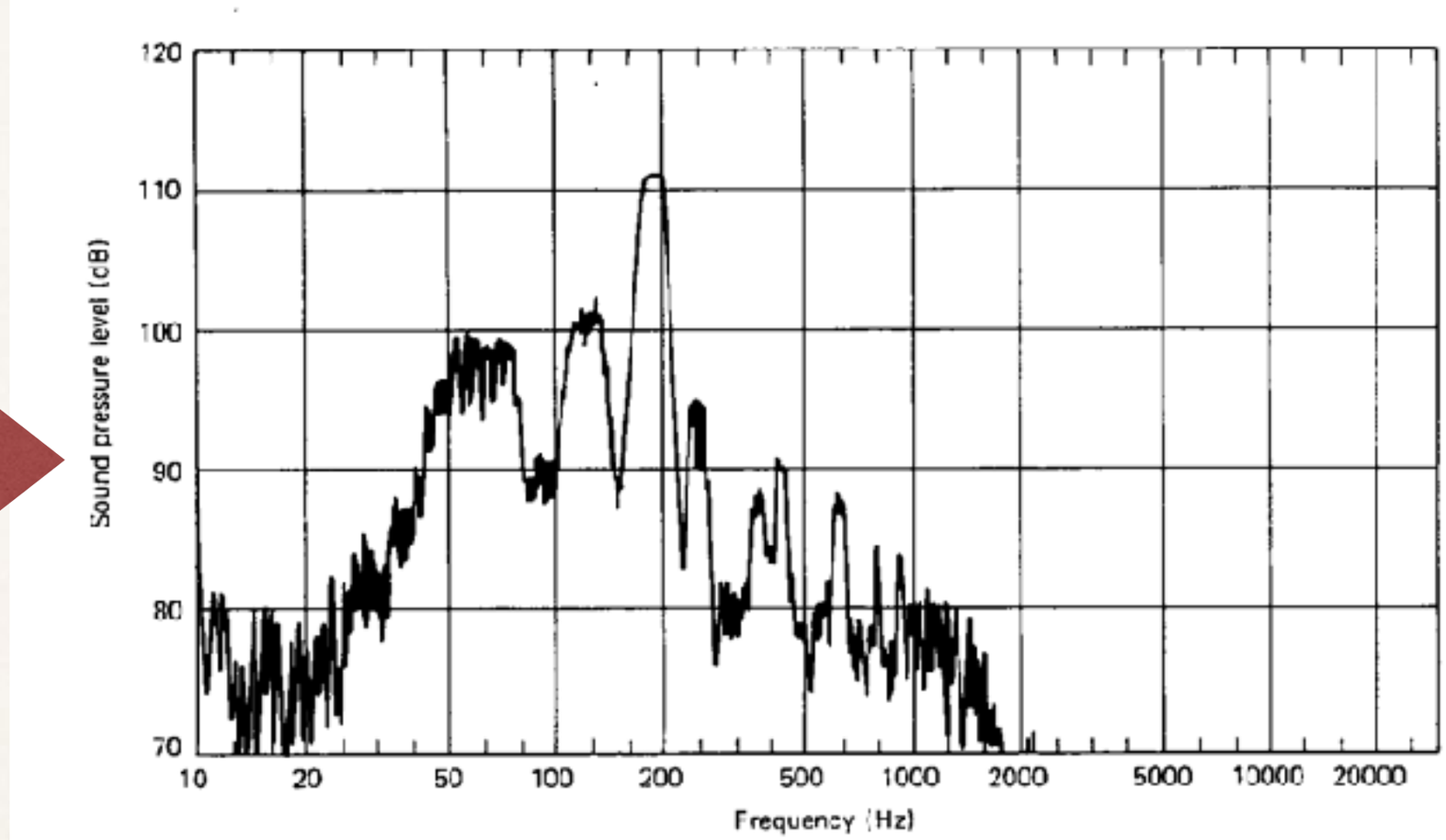
Visualisierung



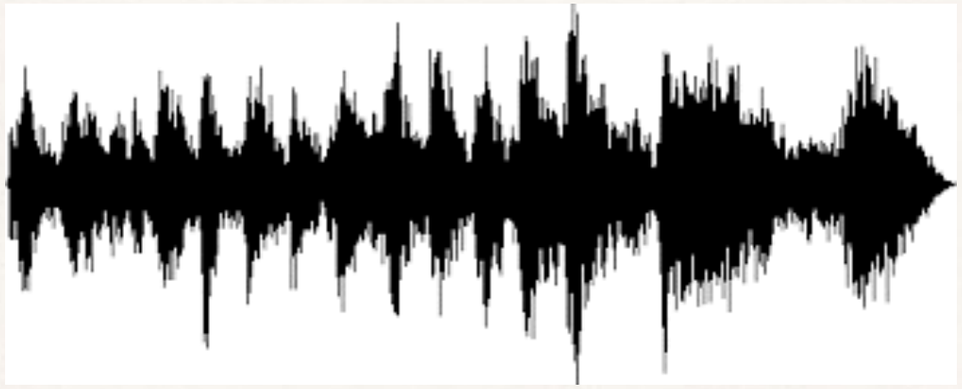
Waveform



Spectrum

Visualisierung

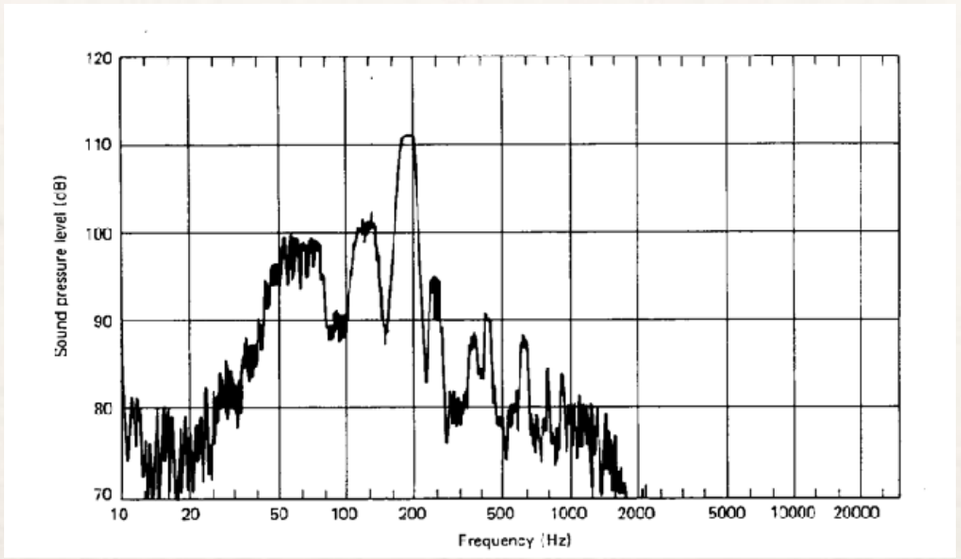
y



x = (Zeit)
y = (Amplitude)

x

y

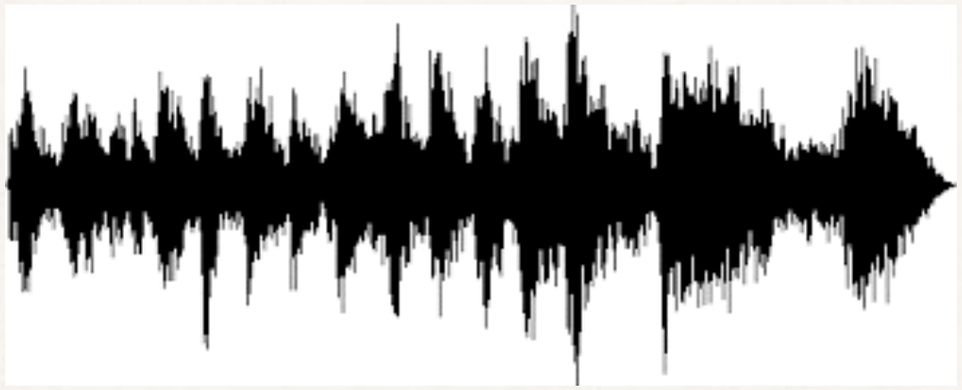


x = (Frequenz)
y = (Amplitude)

x

Visualisierung

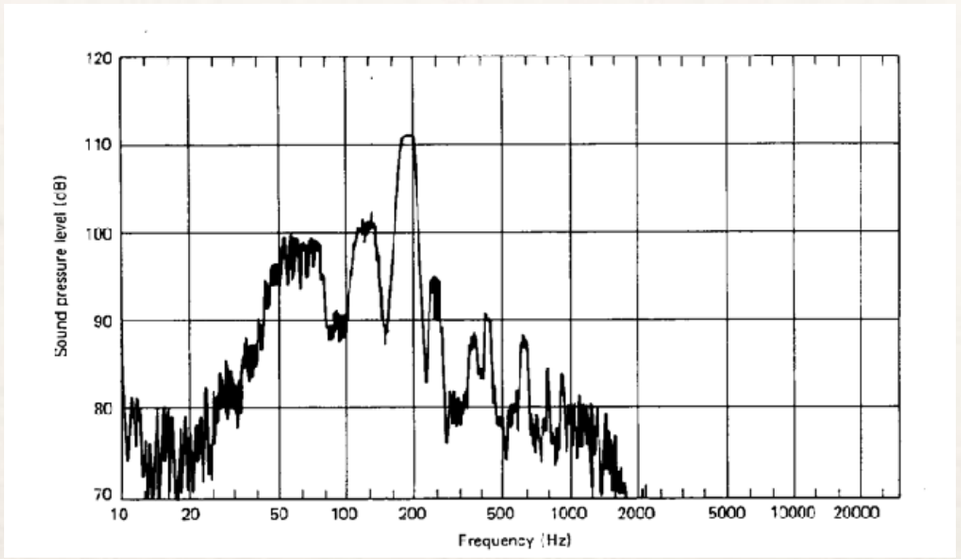
y



x = (Zeit)
y = (Amplitude)

x

y

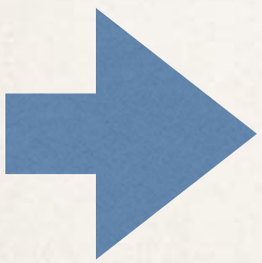


x = (Frequenz)
y = (Magnitude)

x

Visualisierung

Spektrale Komponenten + Zeit



(Spetrogramm)

(Waterfall plot)

Visualisierung

Spektrale Komponenten + Zeit

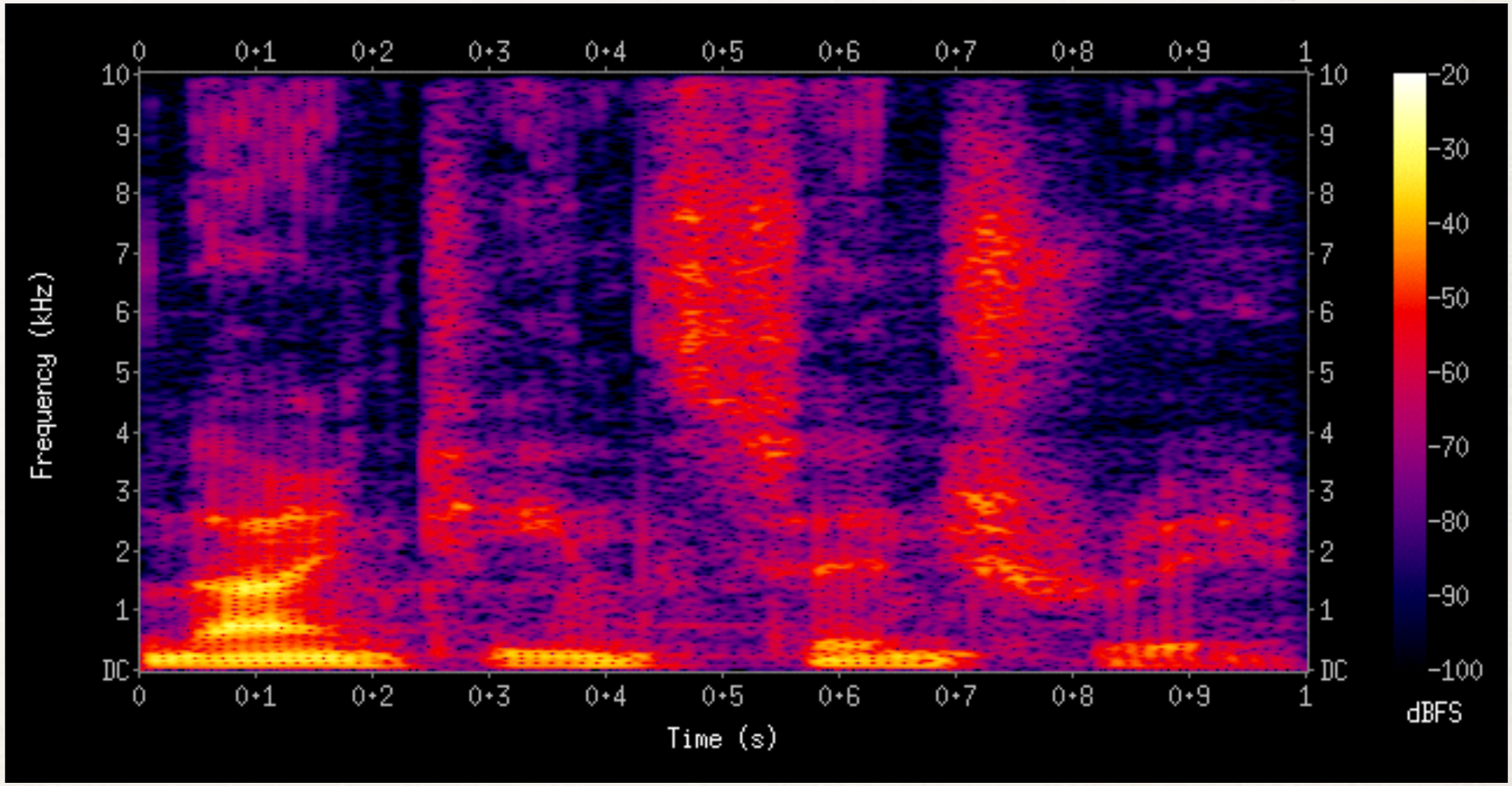
(Spektrogramm / Sonagramm)

(Waterfall plot)

Visualisierung

Farbe : Amplitude

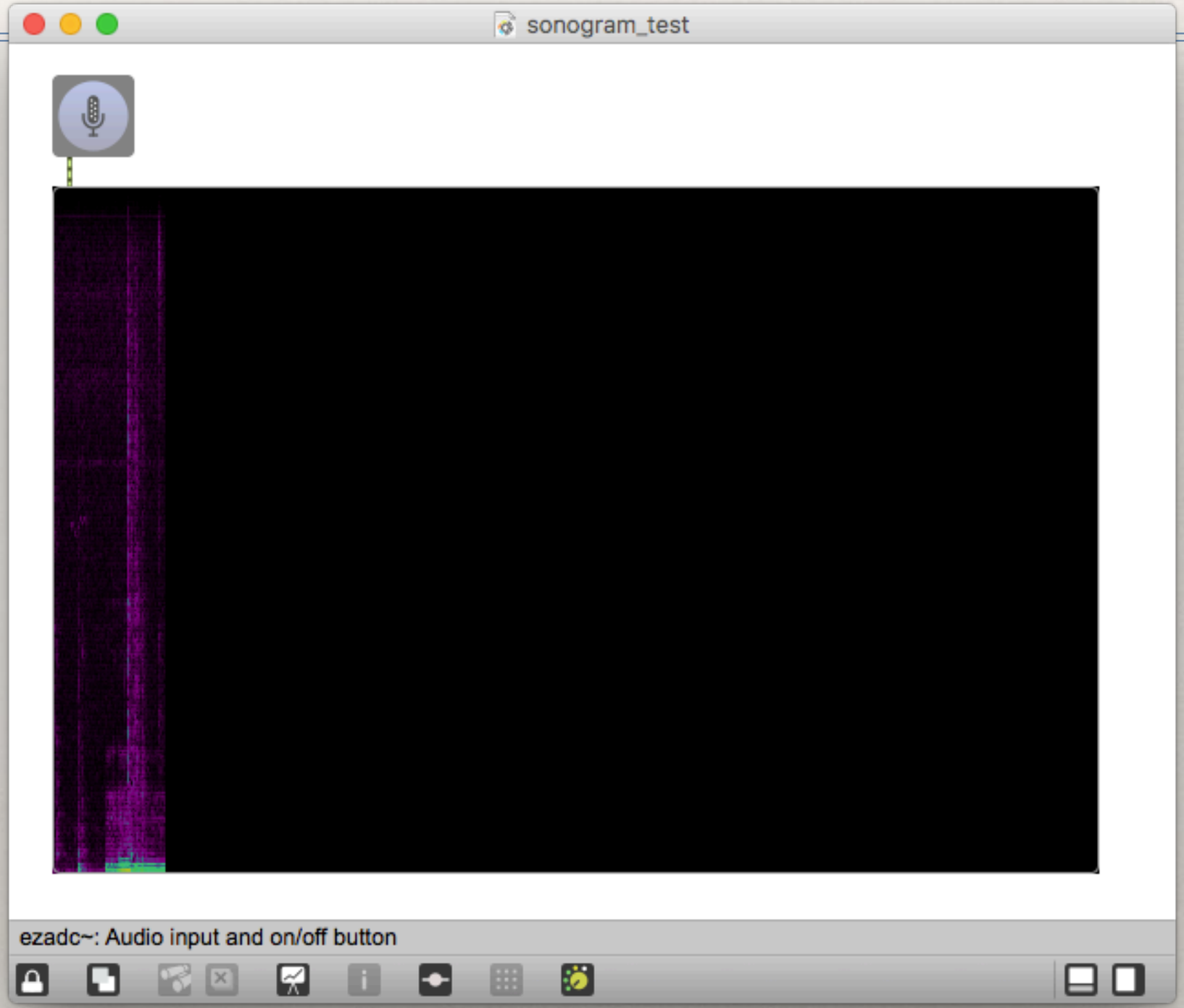
y :
Frequenz



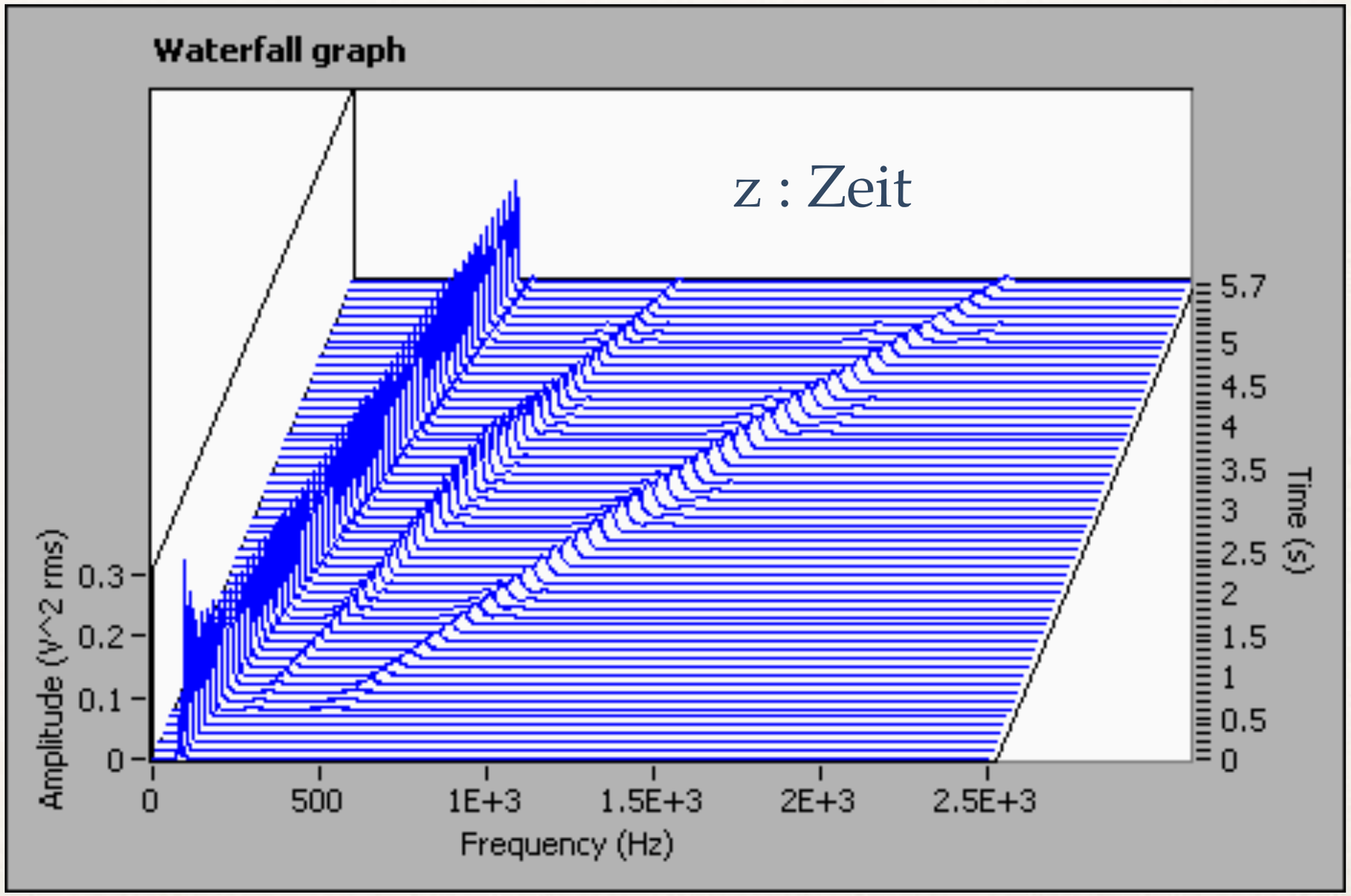
x : Zeit

Spektrogramm

Experiment mit Max



Visualisierung

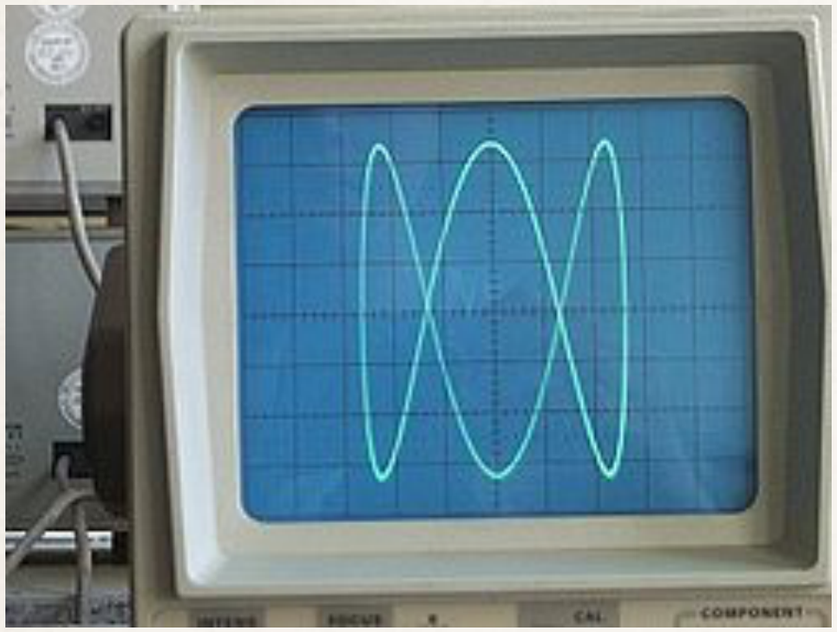


y : Amplitude

x : Frequenz

Waterfall plot

Visualisierung



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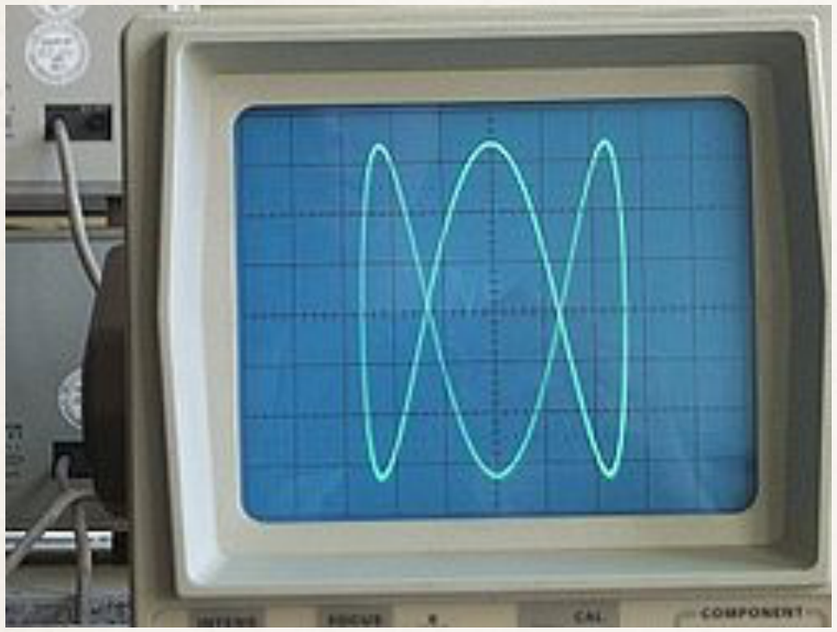
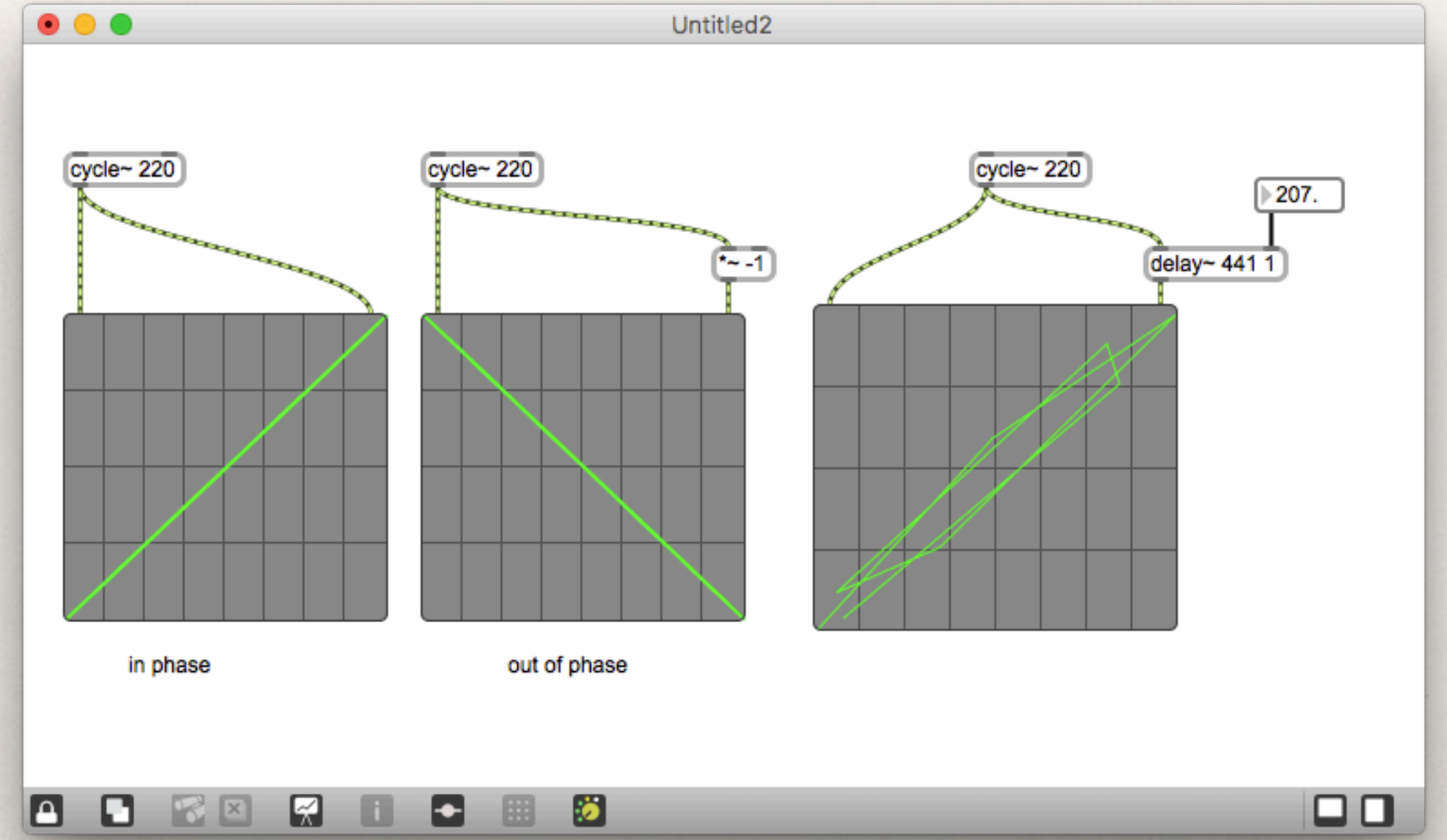
Visualisierung



(Lissajous)

Experiment mit Max



Grafik als Interpretation

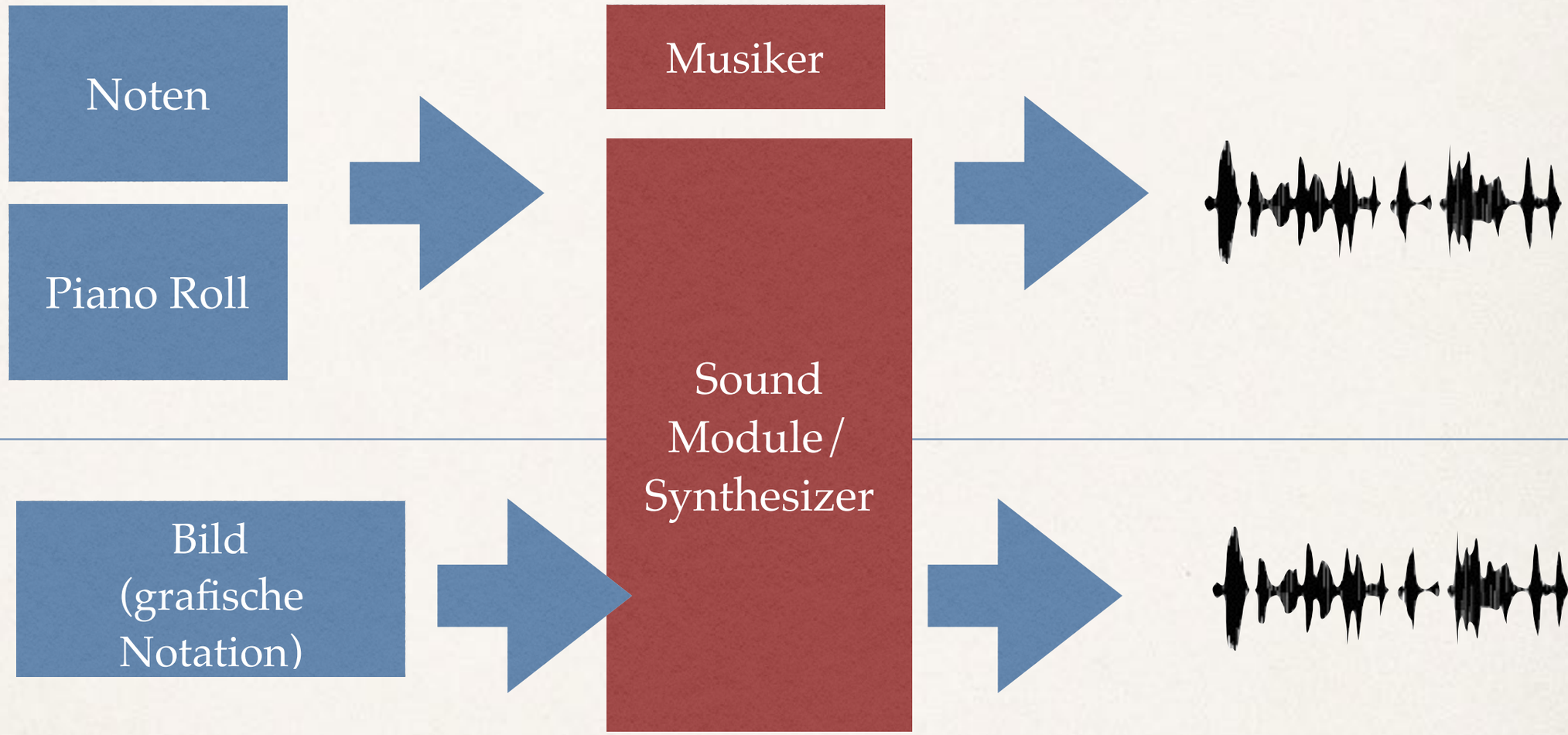
Artikulation

Sonifikation

Graphic Sound Synthesis

Graphic sound synthesis characterises efforts that ***start from a visual approach*** *to* ***sound specification****.*
These systems translate ***images into sound.***

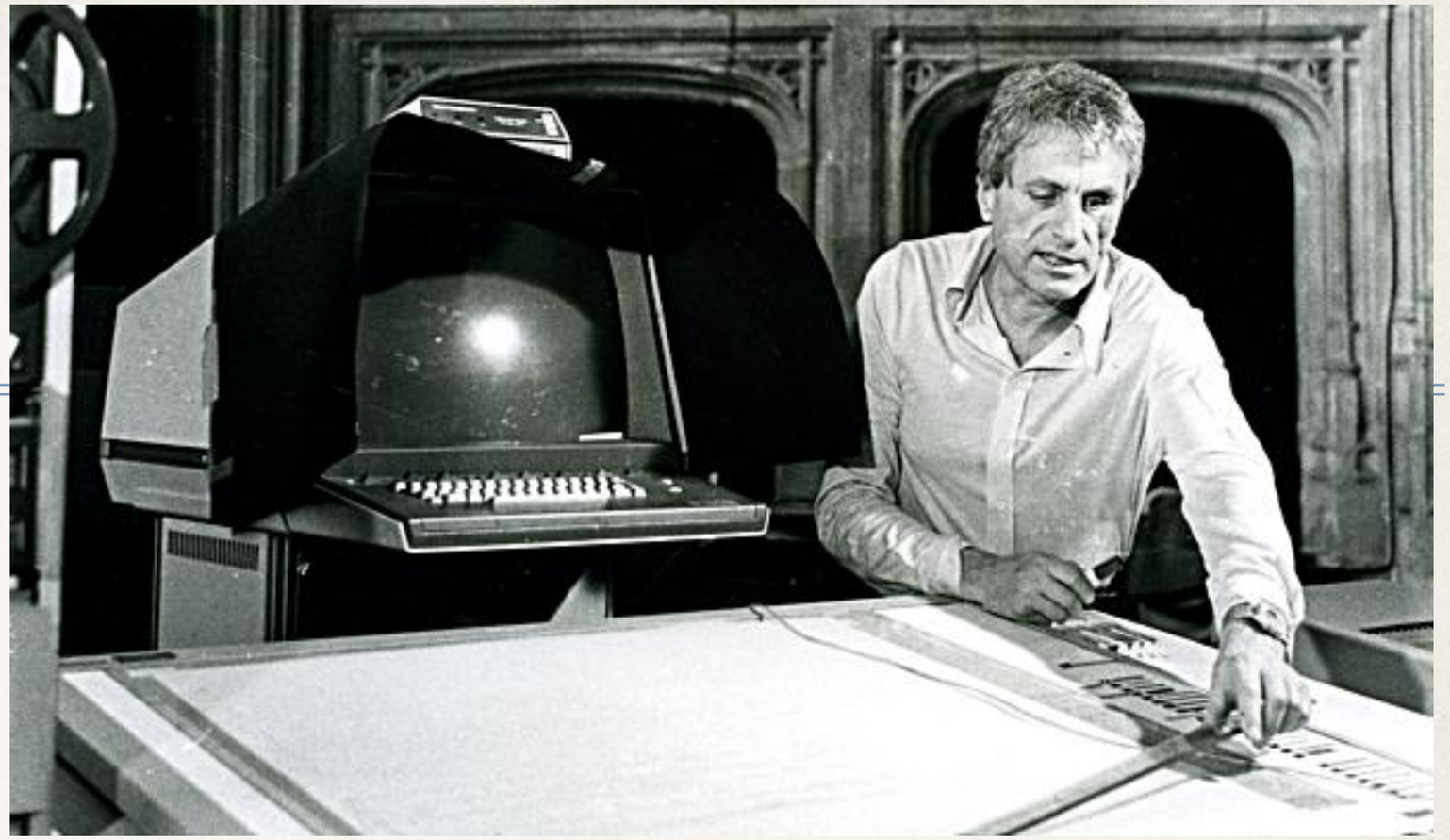
Graphic Sound Synthesis

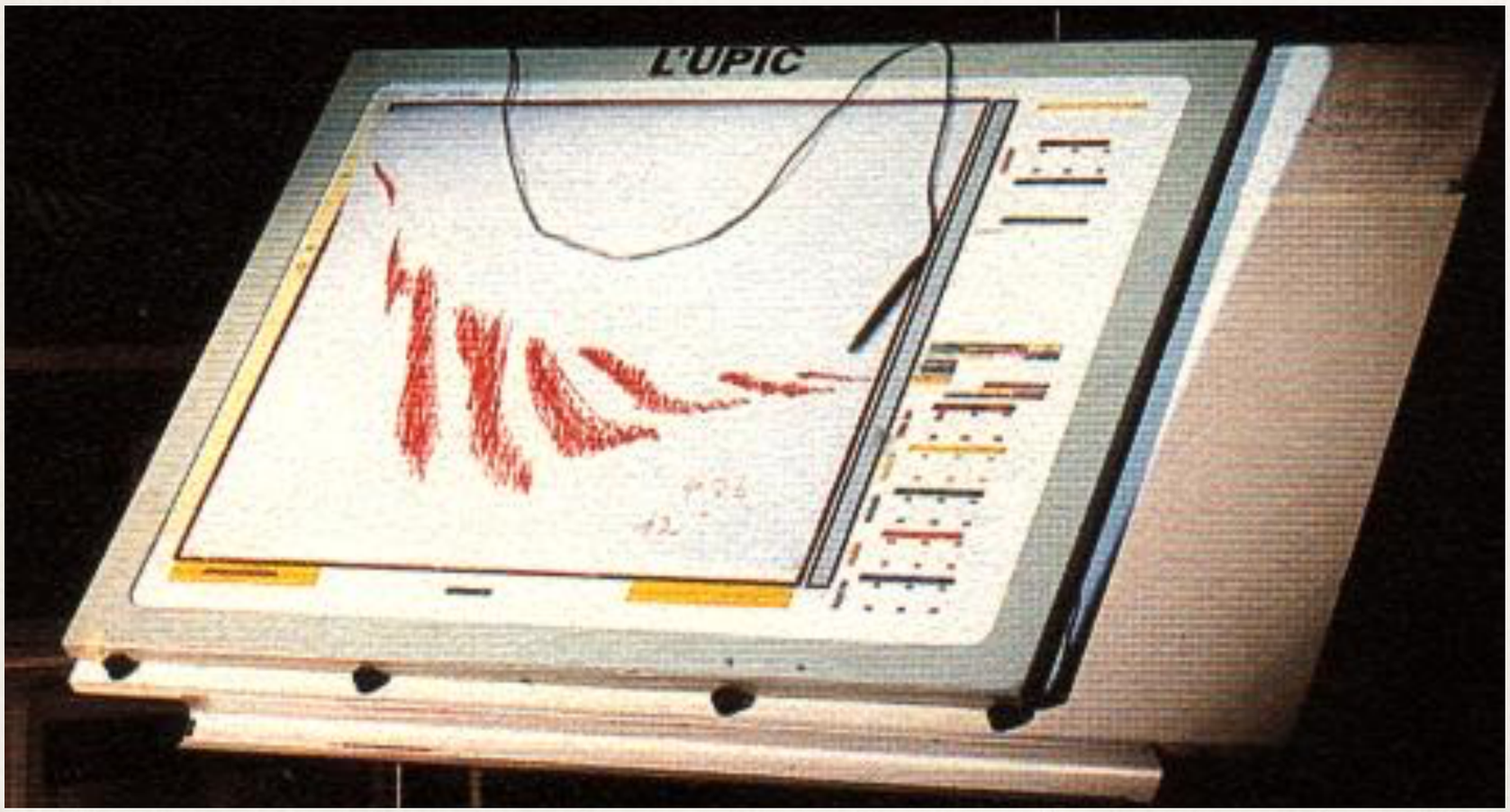


Graphic Sound Synthesis

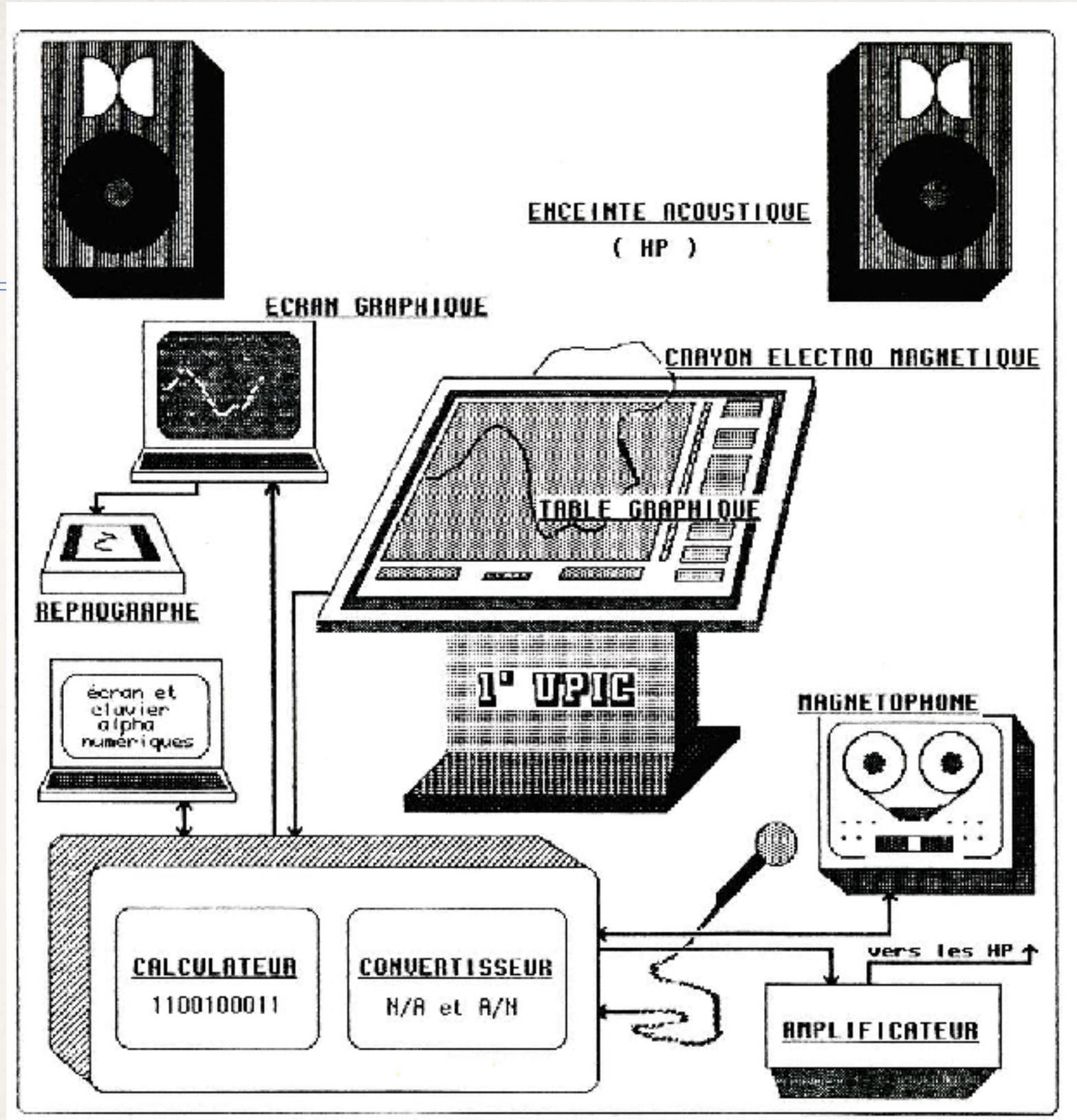
Waveform Segment Synthesis

UPIC

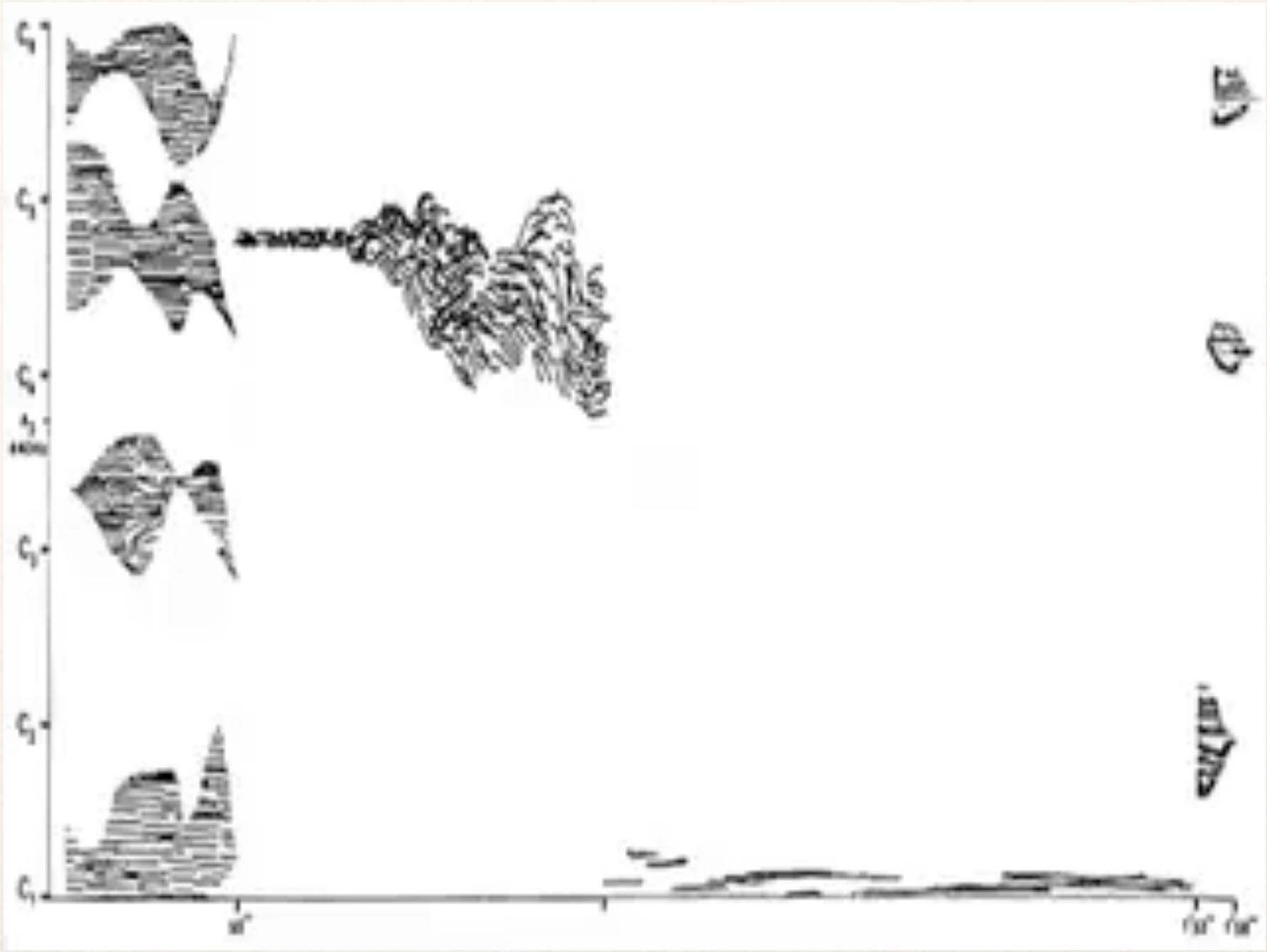




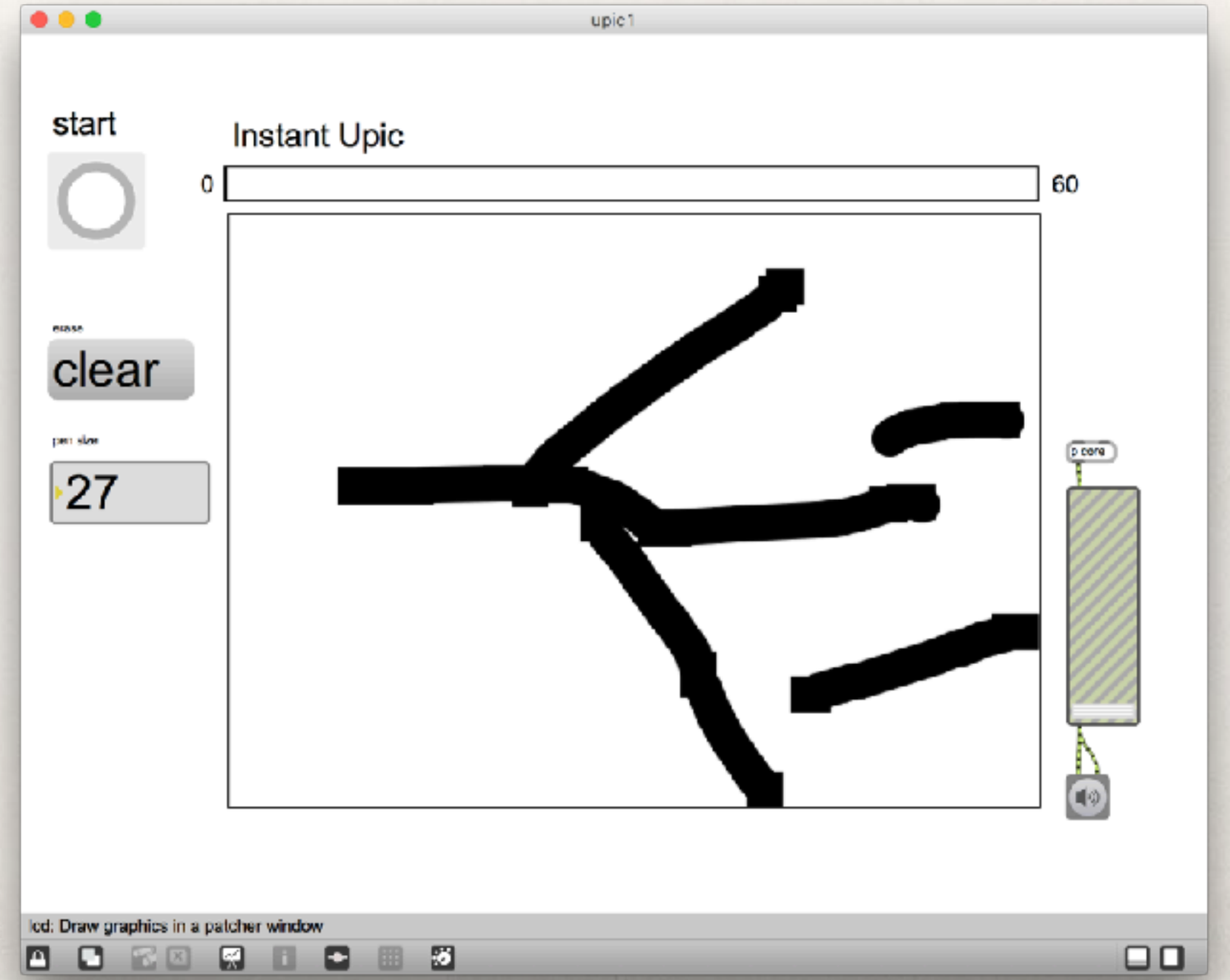
UPIC


ENCEINTE ACOUSTIQUE
(HP)
ECRAN GRAPHIQUE
CRAYON ELECTRO MAGNETIQUE
TABLE GRAPHIQUE
REPROGRAPHE
1° UPIC
écran et clavier alpha numériques
MAGNETOPHONE
CALCULATEUR
1100100011
CONVERTISSEUR
N/A et A/N
vers les HP
AMPLIFICATEUR

Mycènes Alpha(1978)



Experiment mit Max



Nachfolger von UPIC

Realtime UPIC

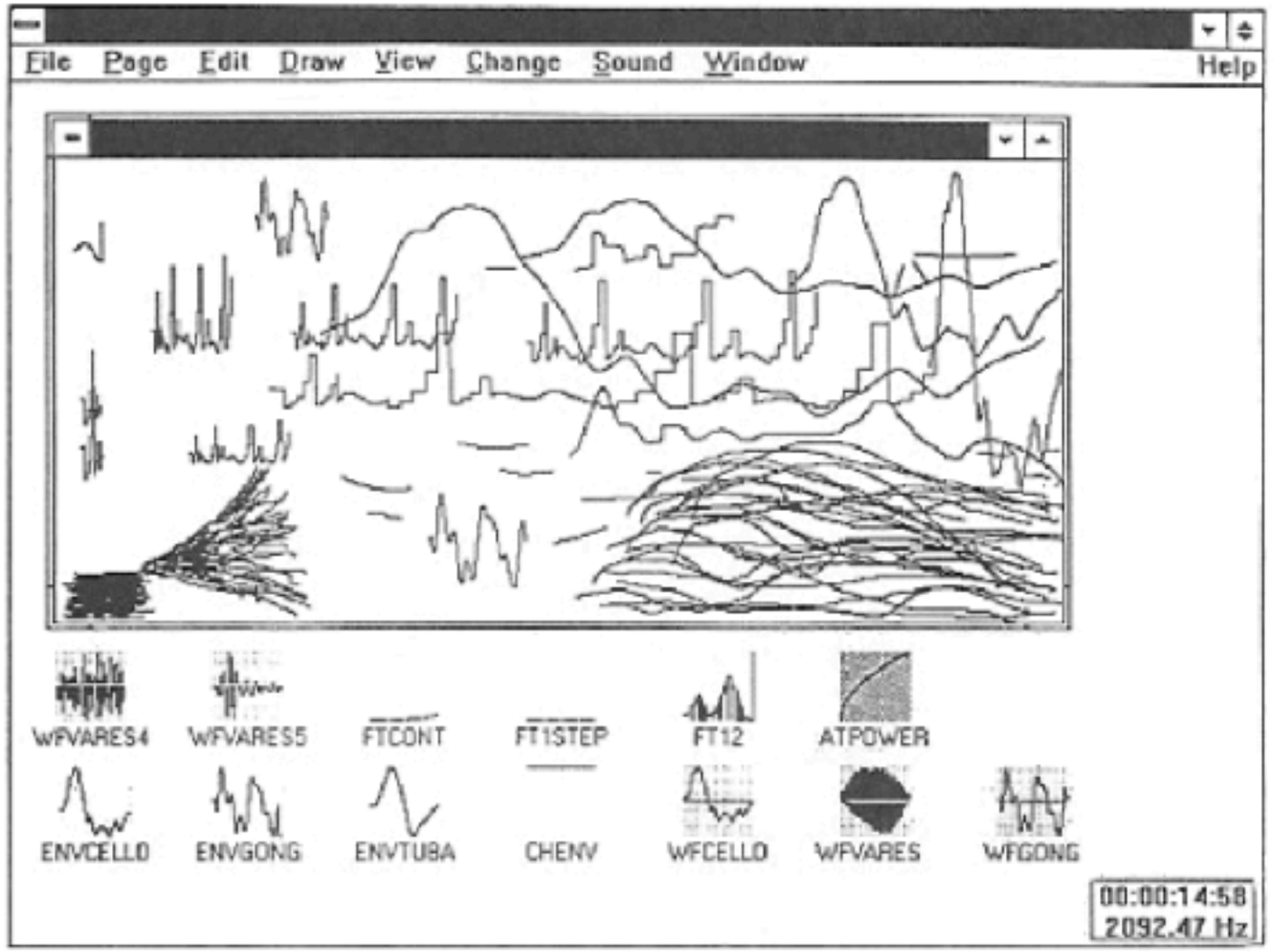
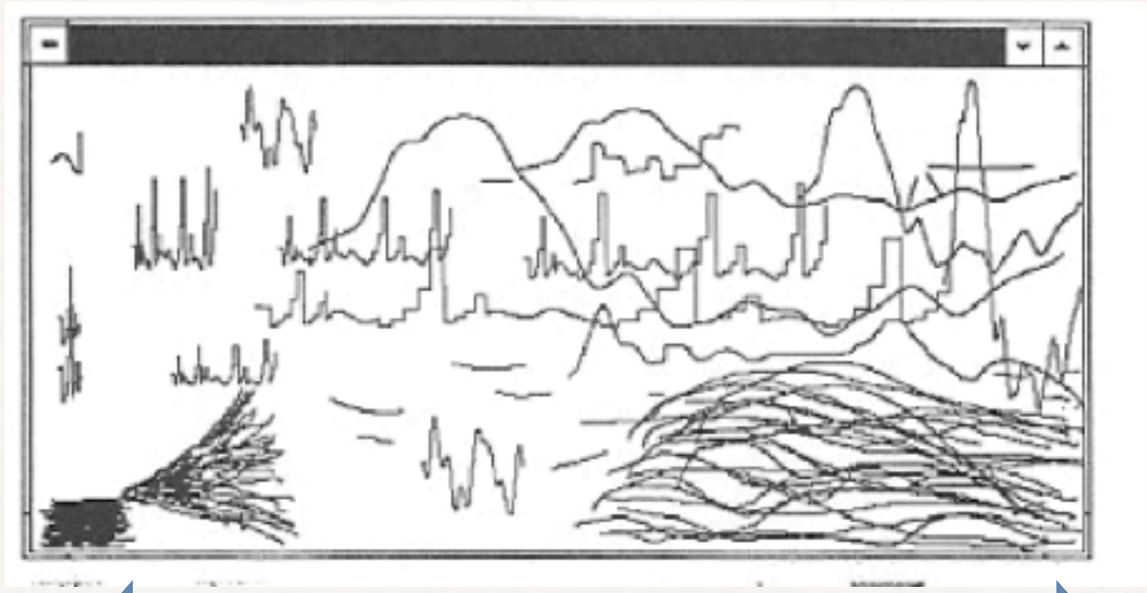
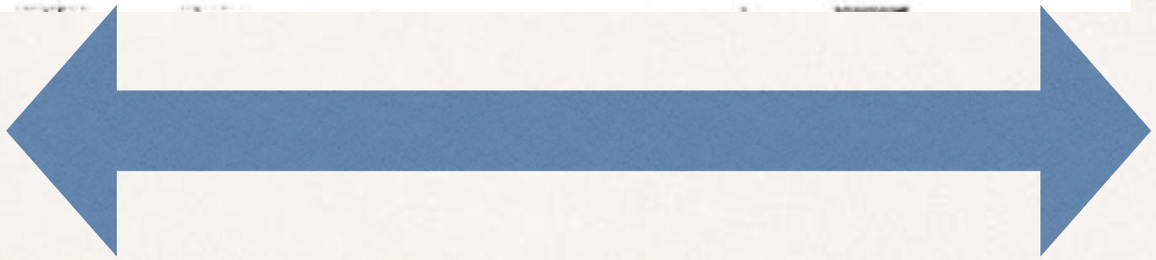


Figure 8.7 A page from a 1992 score by Gerard Pape, realized with a real-time UPIC system at Les Ateliers UPIC, Paris. The icons in the lower part of the screen represent a working set of waveforms and envelopes.

neue Funktionen?

Realtime UPIC

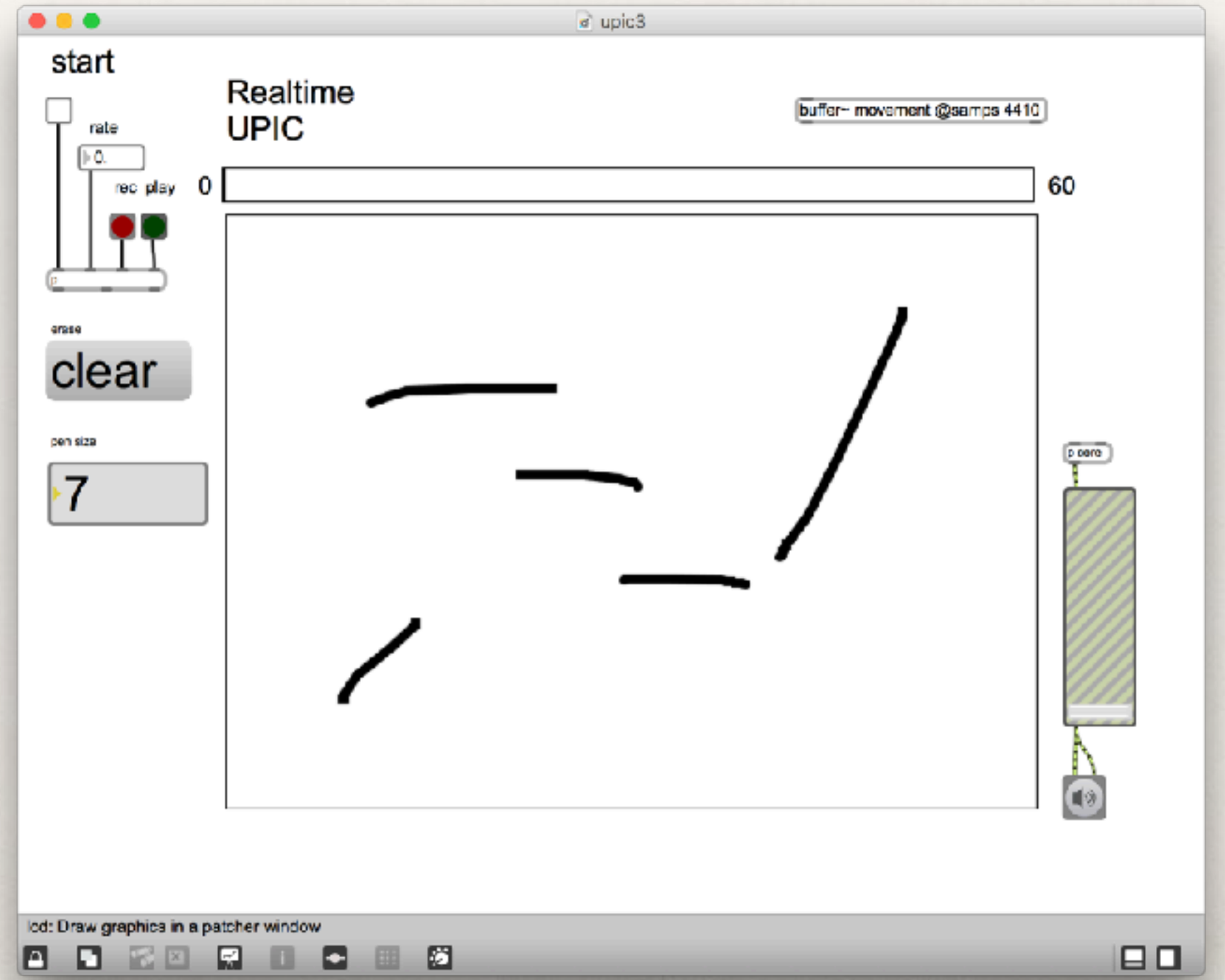




6 msek - 2std.

Die Geschwindigkeit der Wiedergabe ist in Echtzeit steuerbar

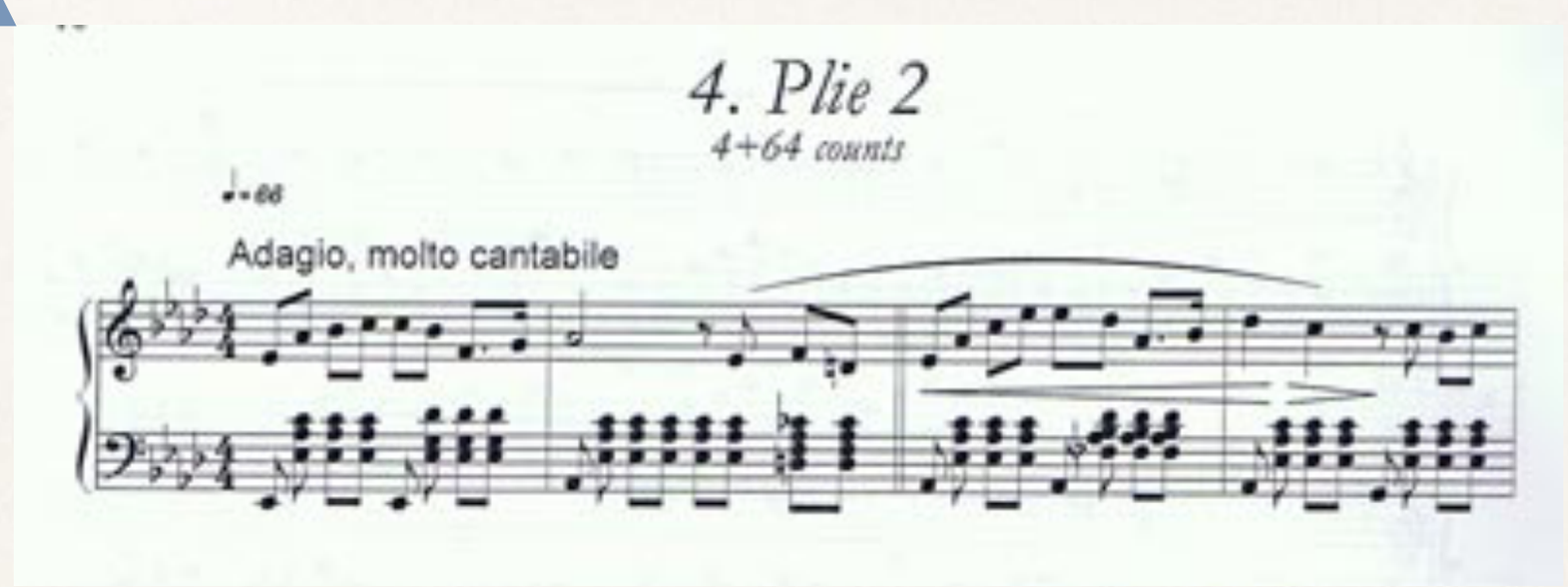
Experiment mit Max



X = Zeit, Y = Tonhöhe ?

Noten

Tonhöhe



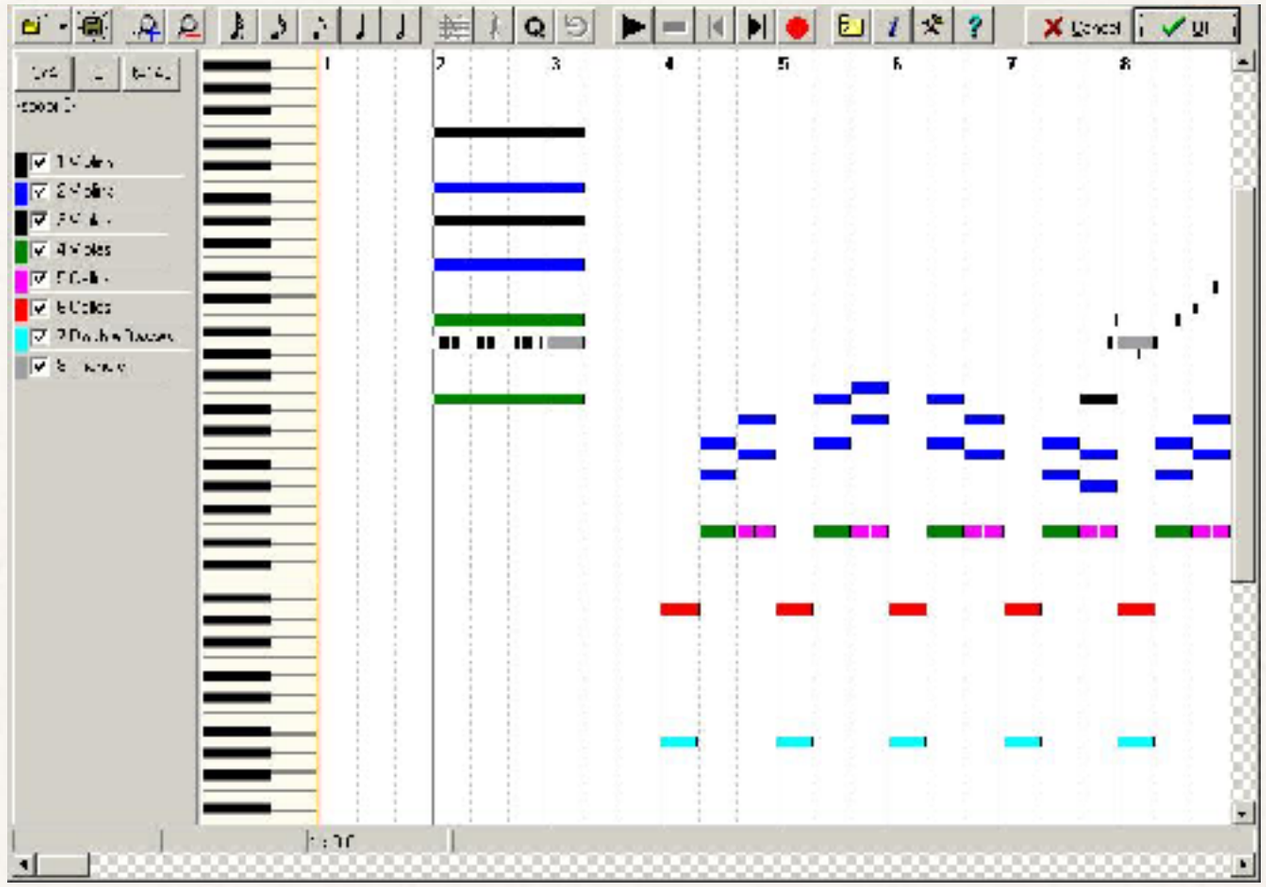
y

Zeit

x

Tonhöhe

y

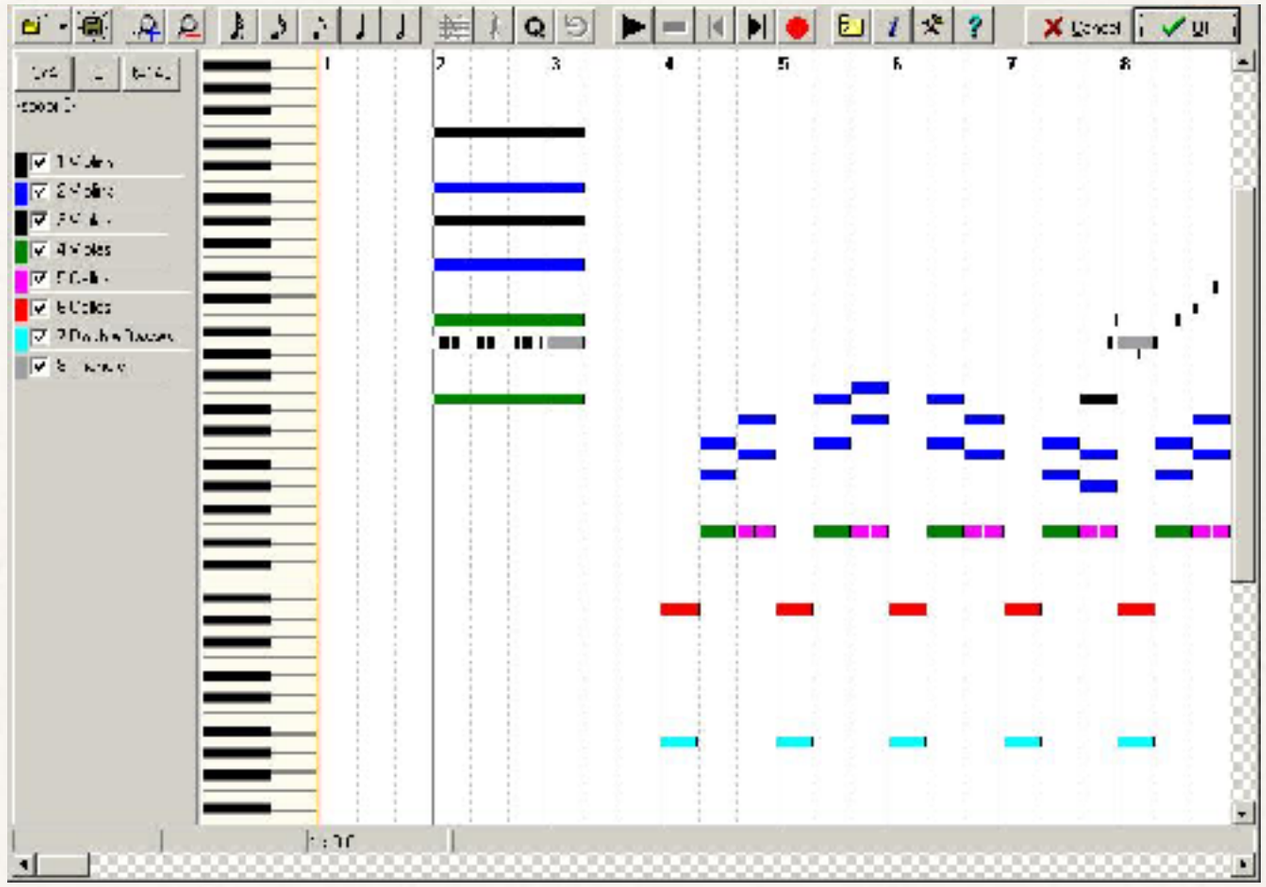


Zeit x

( )

Tonhöhe

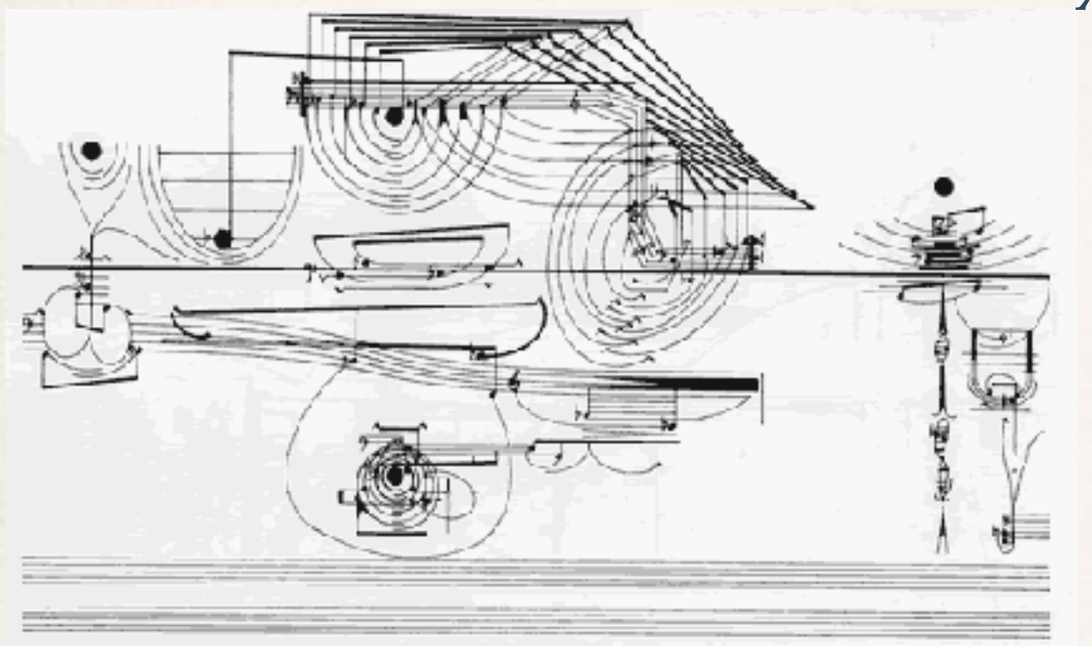
y



Zeit x

(Piano Roll)

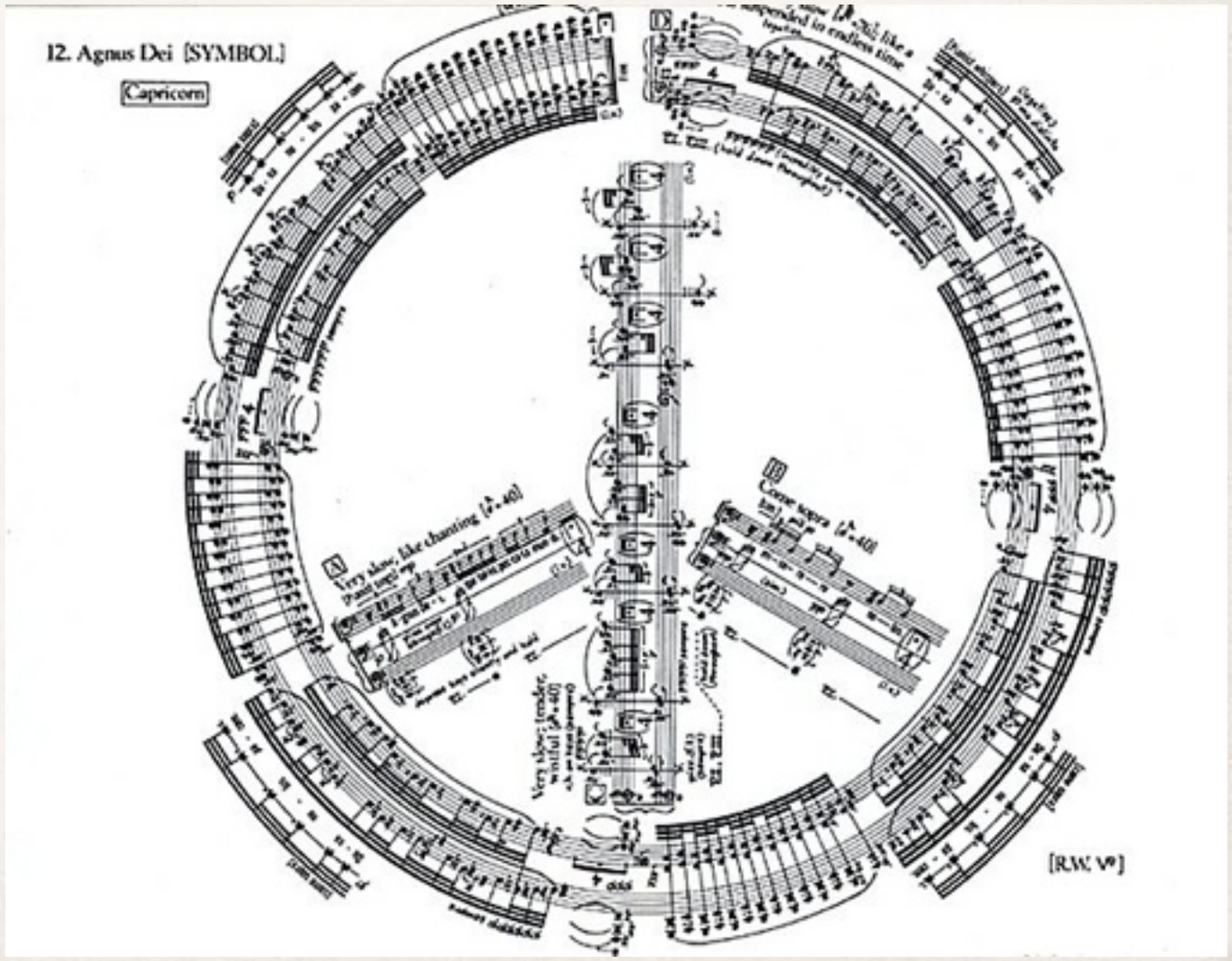
1950 - 60s



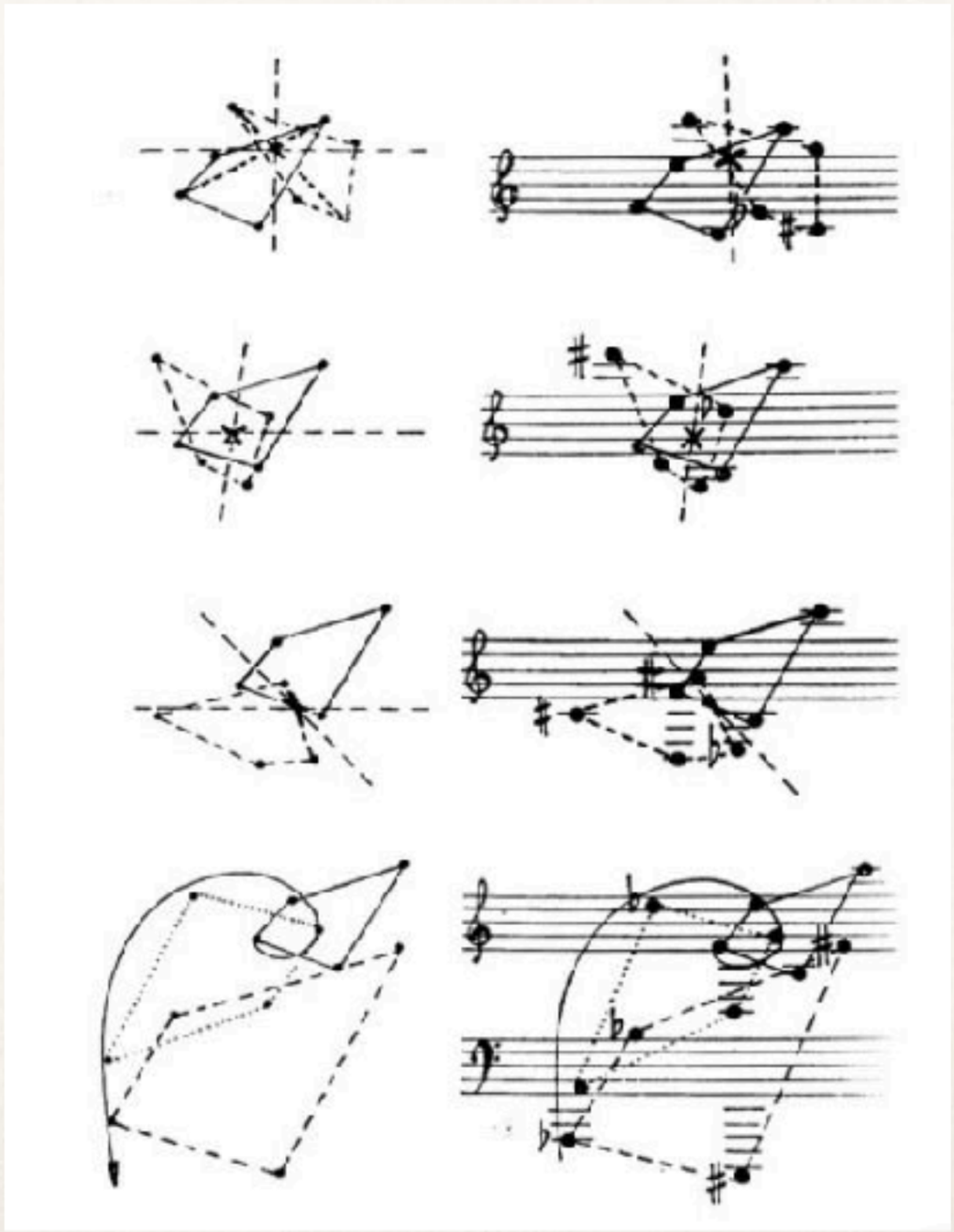
Cornelius Cardew Treaties

X, Y?

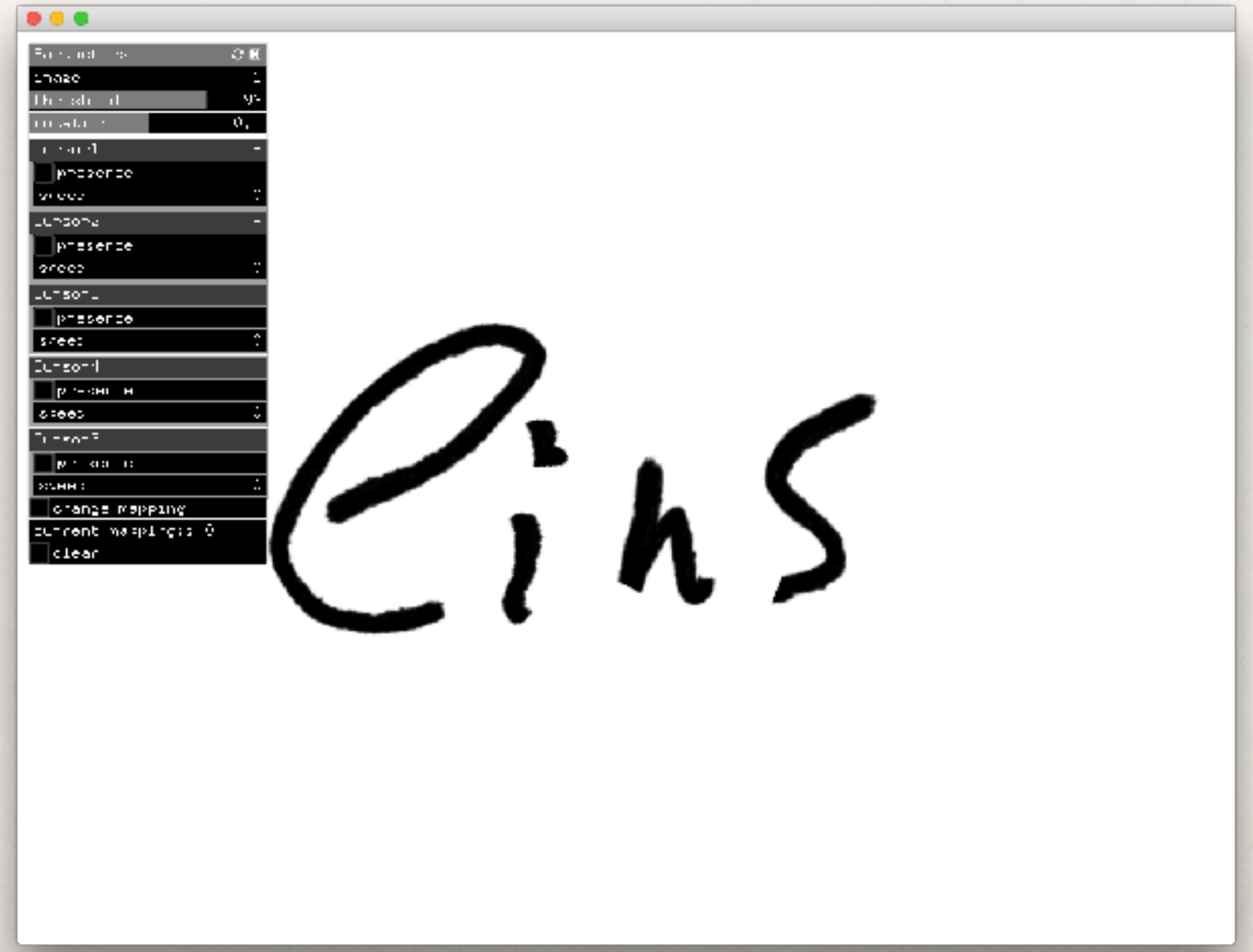
George Crumb



Kagel *Translation- Notation*



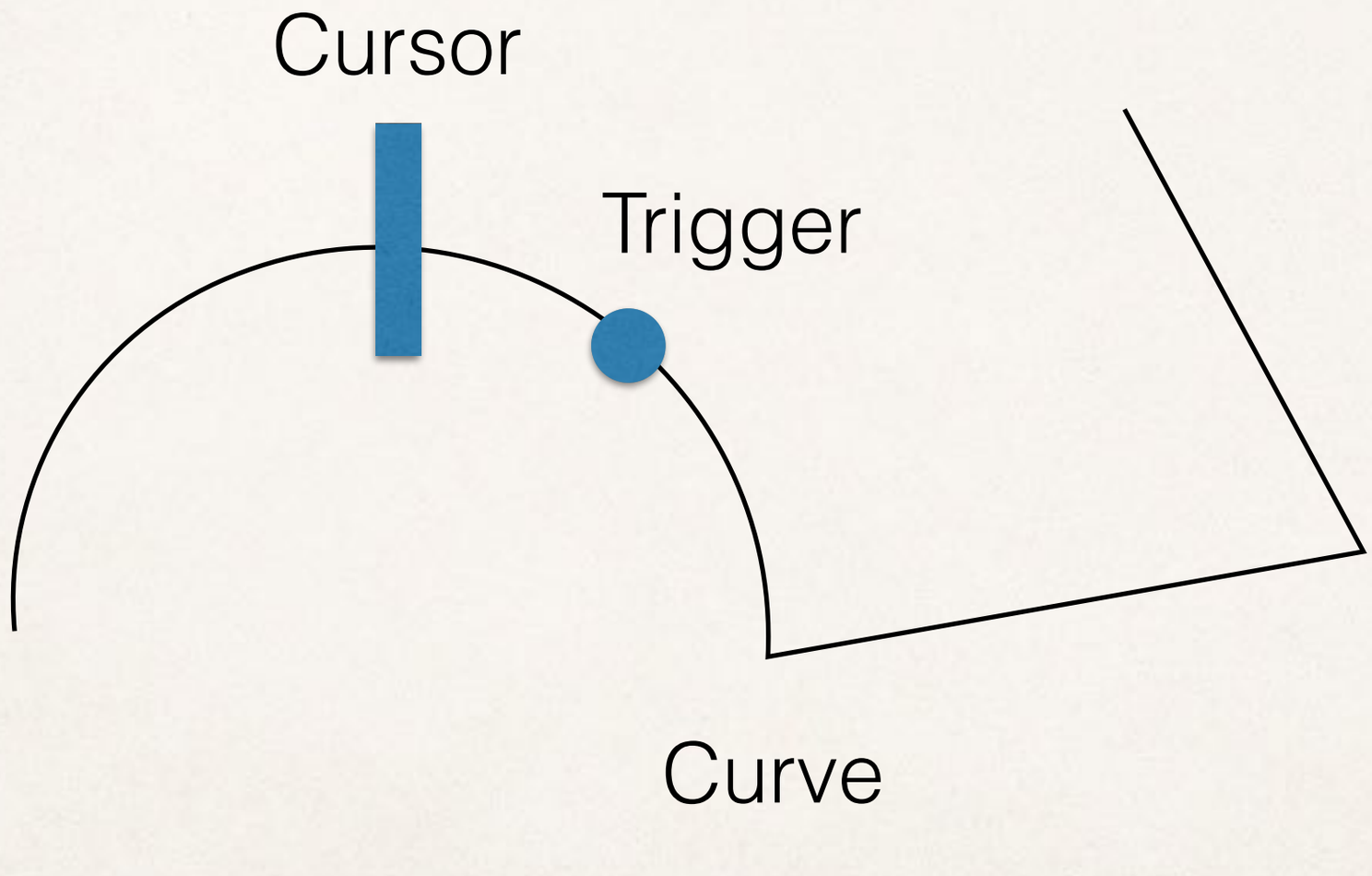
Rotating Score



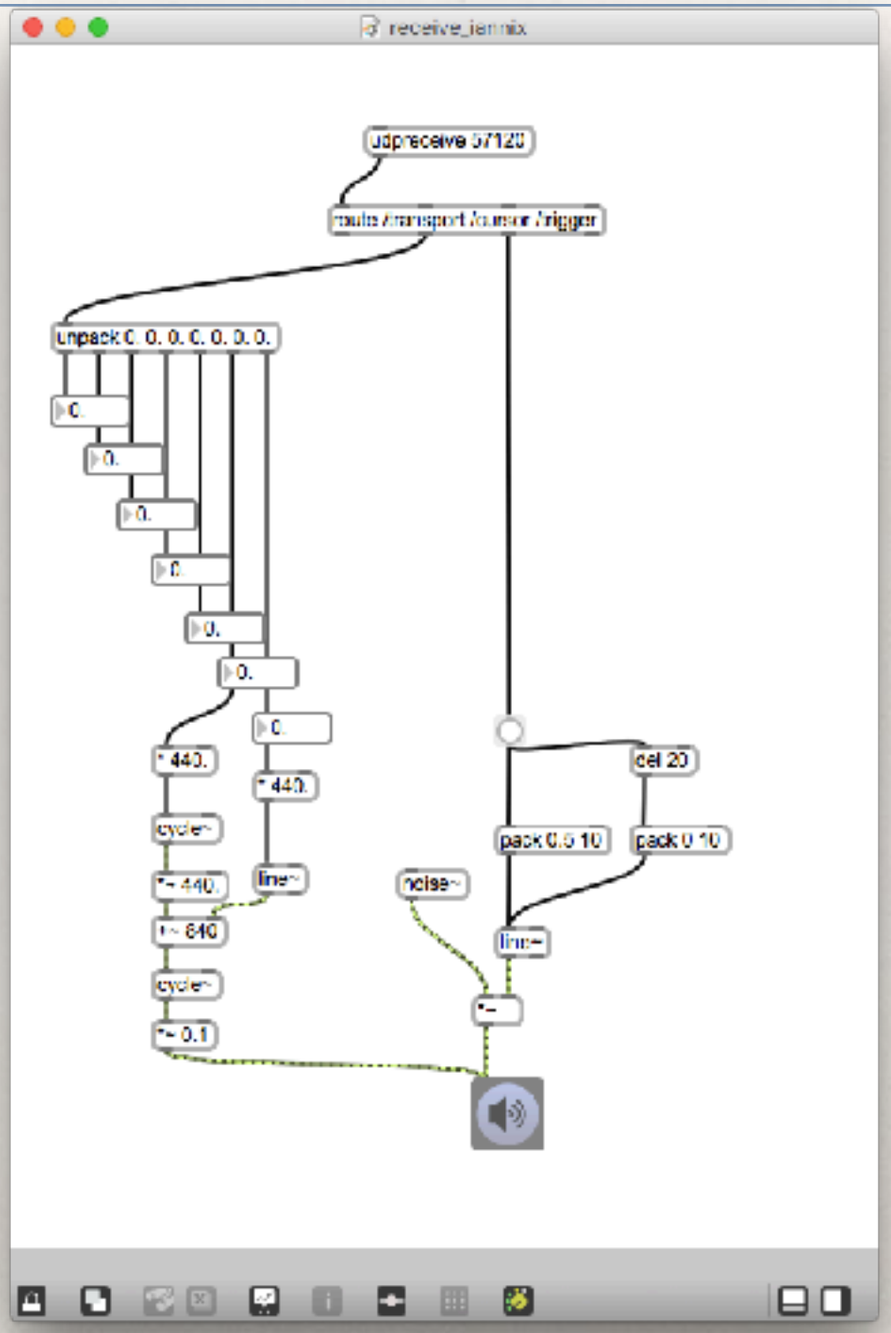
Iannix Projekt

http://www.iannix.org/en/

Iannix Projekt



Experiment mit Max und Iannix

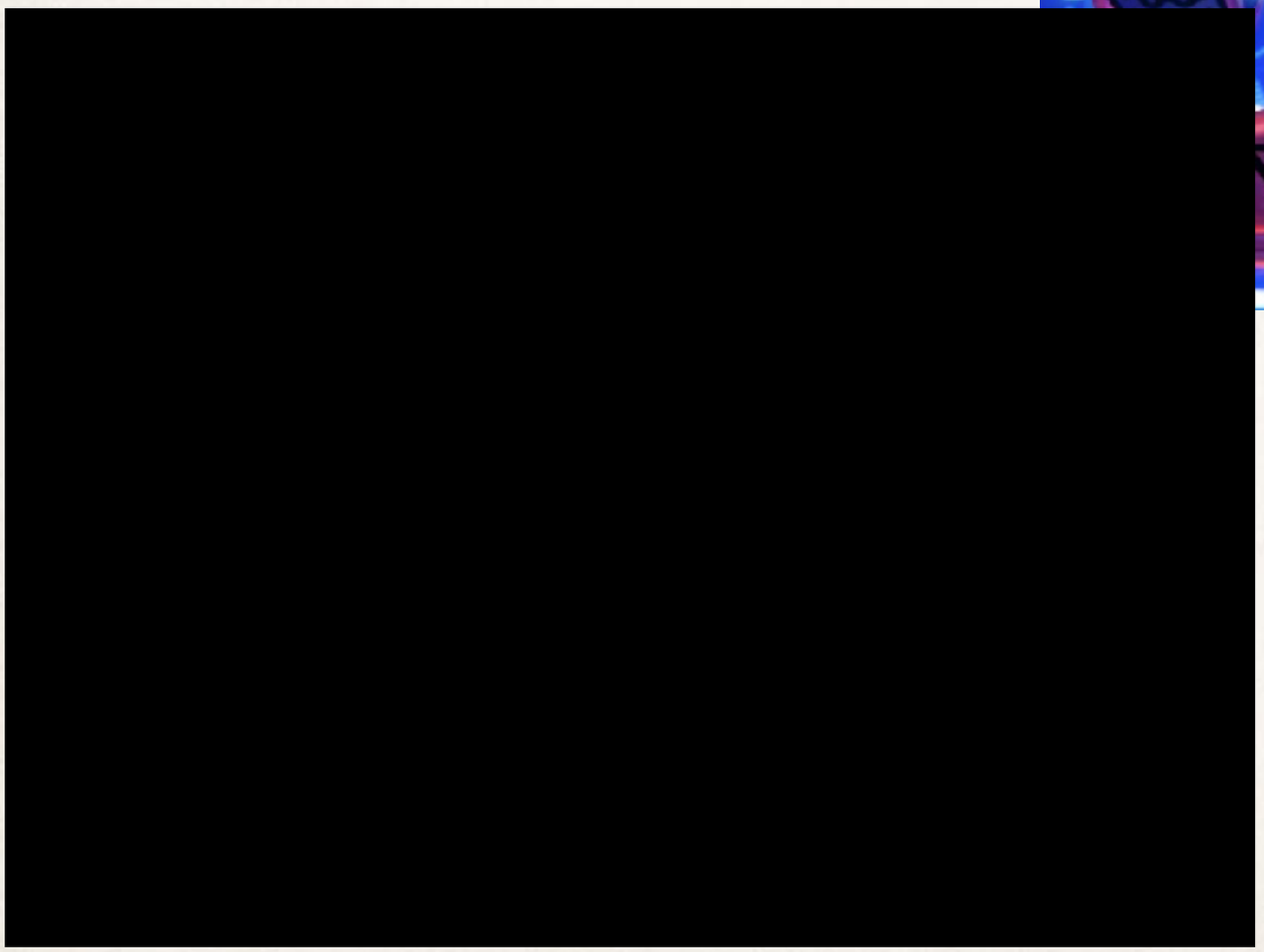


3D Noten

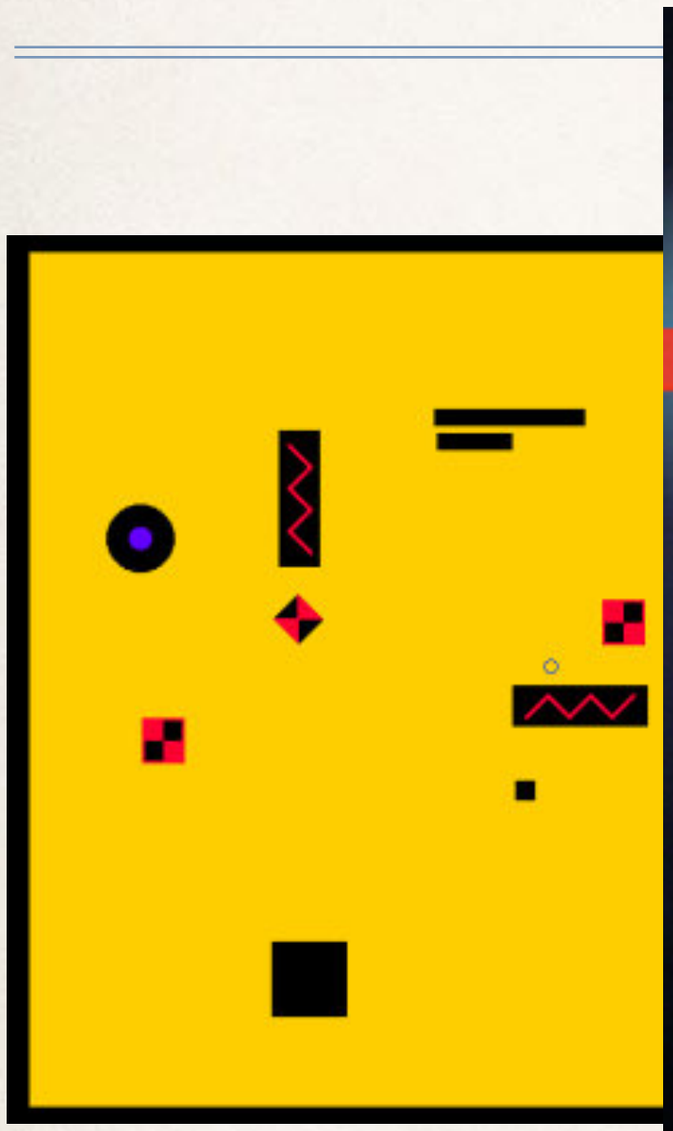
Sound Writer
Konzept:Peter Weibel
Softwareentwicklung: Chikashi Miyama

VOSIS

Reactable



Kiyoshi Furukawa: small fish



Chris Carlson: Borderlands Granular