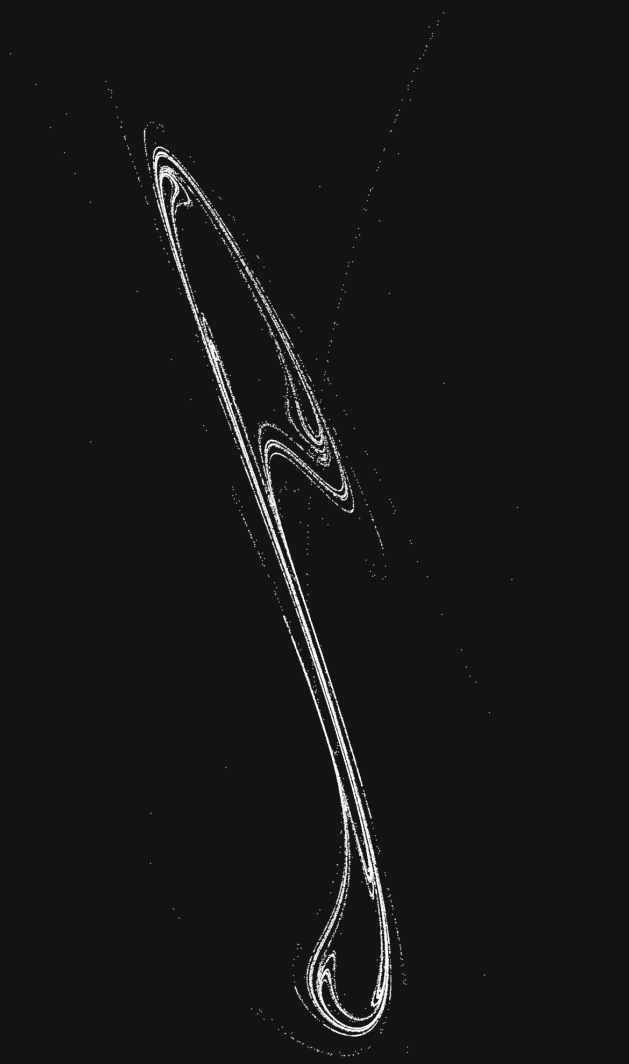
CHAOS OPERATOR

MANUAL

BURGERS MAP



HI THERE!

CHAOS OPERATOR IS A CHAOS THEORY BASED NOISE/ SOUND GENERATOR FOR NORNS.

IN SHORT CHAOS THEORY FOCUSES ON COMPLEX SYSTEMS WHICH SEEM TO BE CHAOTIC BUT UNDER CERTAIN CIRCUMSTANCES START TO BEHAVE IN AN ORDERLY FASHION / IN A HARMONIC WAY. CHAOS OPERATOR MAKES USE OF WELL KNOWN EQUATIONS OF THIS THEORY AND LETS YOU EXPERIMENT WITH THEM TO PRODUCE VALUES WHICH ARE THEN SENT VIA MIDI, OSC OR USED IN CHAOSOP'S INTERNAL SUPERCOLLIDER ENGINE.

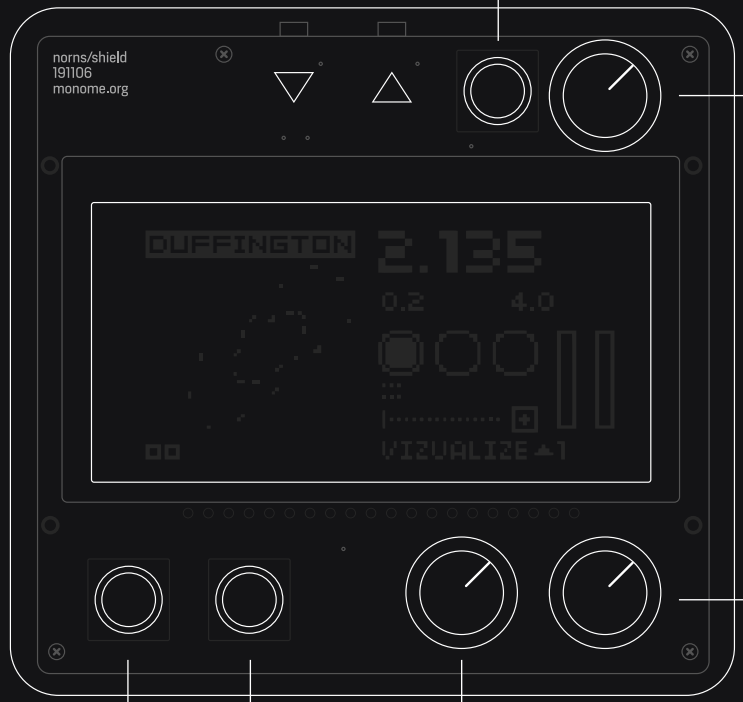
»CHAOS THEORY IS AN INTERDISCIPLINARY SCIENTIFIC THEORY AND BRANCH OF MATHEMATICS FOCUSED ON UNDERLYING PATTERNS AND DETERMINISTIC LAWS, OF DYNAMICAL SYSTEMS, THAT ARE HIGHLY SENSITIVE TO INITIAL CONDITIONS, THAT WERE ONCE THOUGHT TO HAVE COMPLETELY RANDOM STATES OF DISORDER AND IRREGULARITIES. CHAOS THEORY STATES THAT WITHIN THE APPARENT RANDOMNESS OF CHAOTIC COMPLEX SYSTEMS, THERE ARE UNDERLYING PATTERNS, INTER-CONNECTION, CONSTANT FEEDBACK LOOPS, REPETITION, SELF-SIMILARITY, FRACTALS, AND SELF-ORGANIZATION.«

HTTPS://EN.WIKIPEDIA.ORG/WIKI/CHAOS_THEORY

BUTTON LAYOUT

KEY 1

STANDARD
FUNCTION



ENDCODER 3

SETS THE VALUE BY
HOW MUCH THE SELECTED
PARAMATER WILL BE
CHANGED (DELTA)

ENDCODER 2

CHANGE SELECTED
PARAMETER

KEY 2

SELECT PREVIOUS
CHAOS
EQUATION

KEY 3

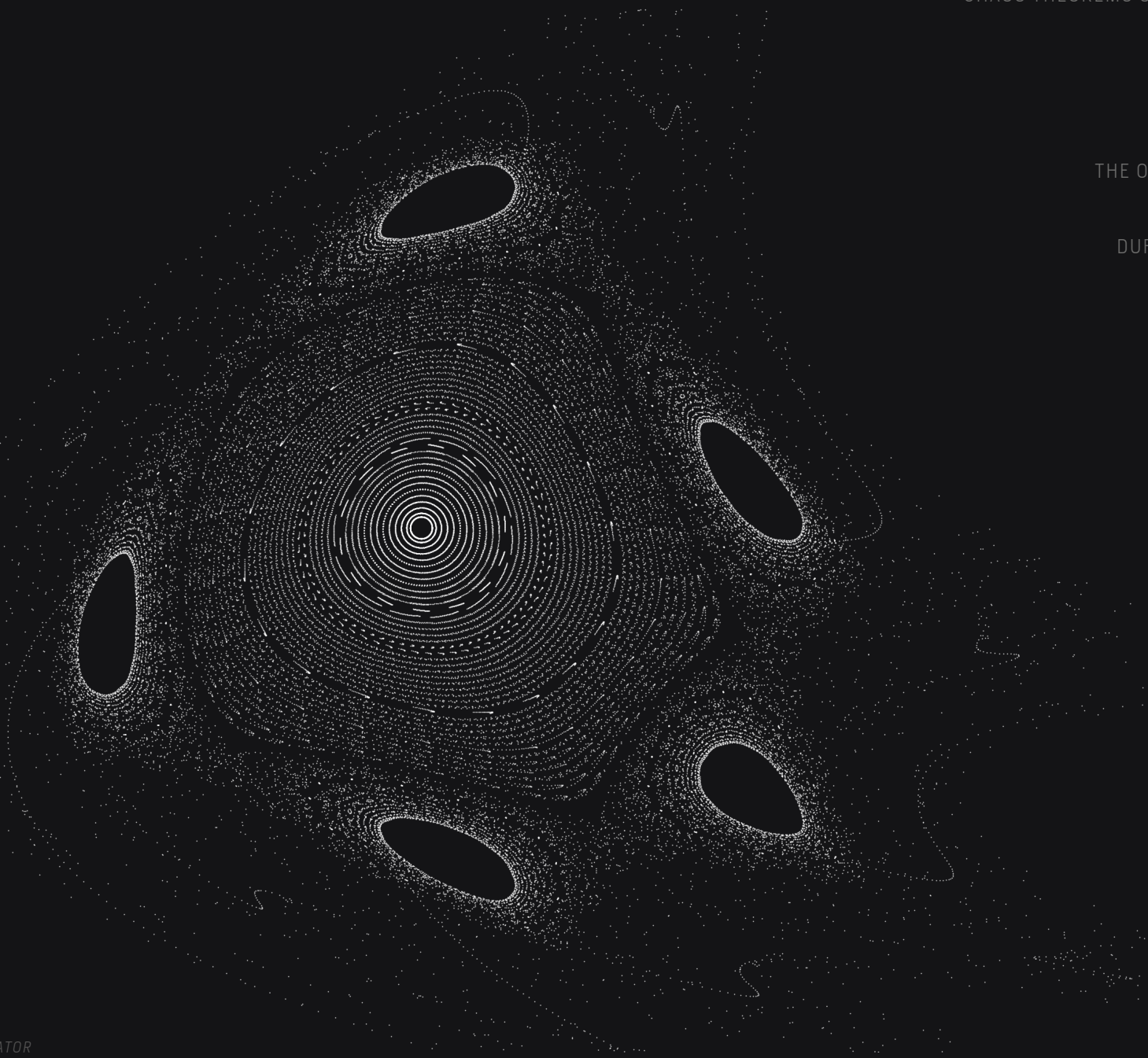
SELECT NEXT
CHAOS
EQUATION

ENDCODER 1

SELECT
PARAMETER
TO CHANGE

CHAOS THEOREMS USED IN CHAOSOP ARE:

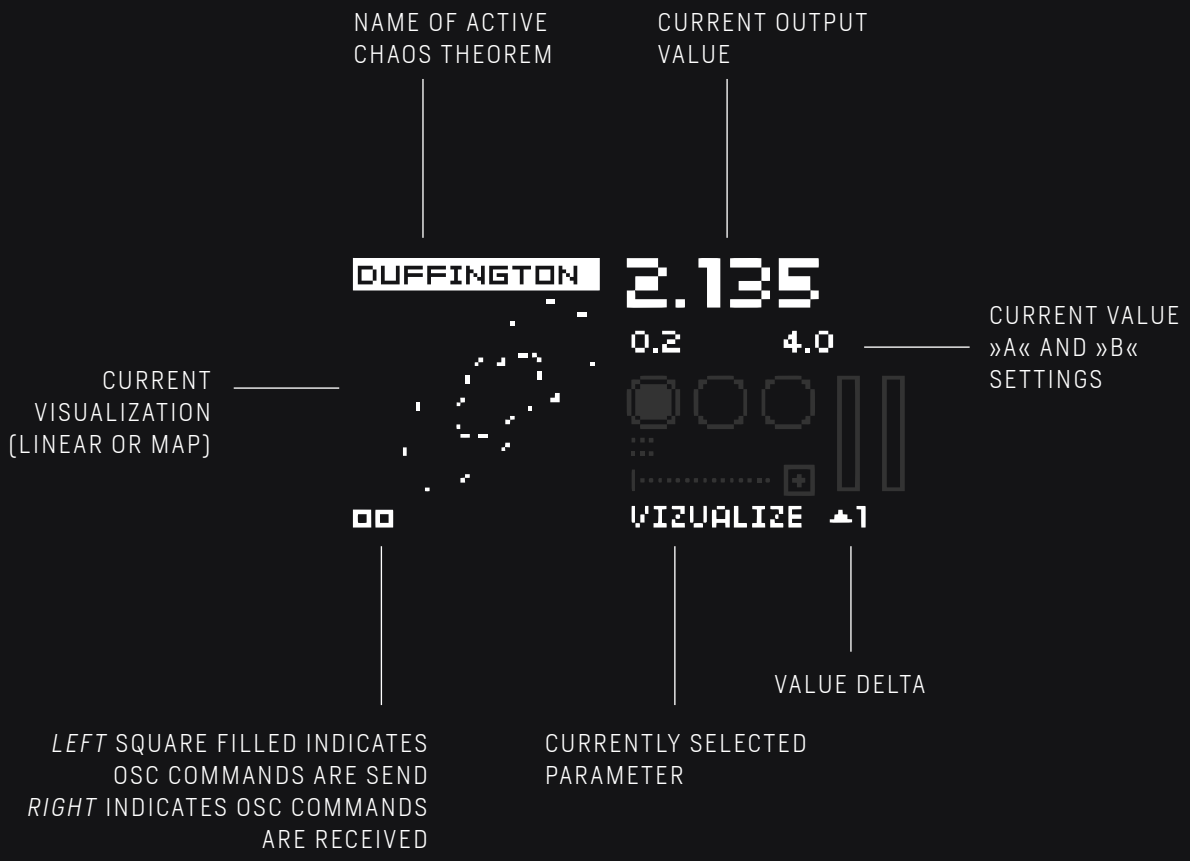
HENON MAP
USHIKI MAP
HENON ATTRACTOR
BURGERS MAP
HOPF BIFURCATION
THE ONE DIMENSIONAL MAP
THE CIRCLE MAP
RÖSSLER MAP
DUFFINGTON OSCILLATOR

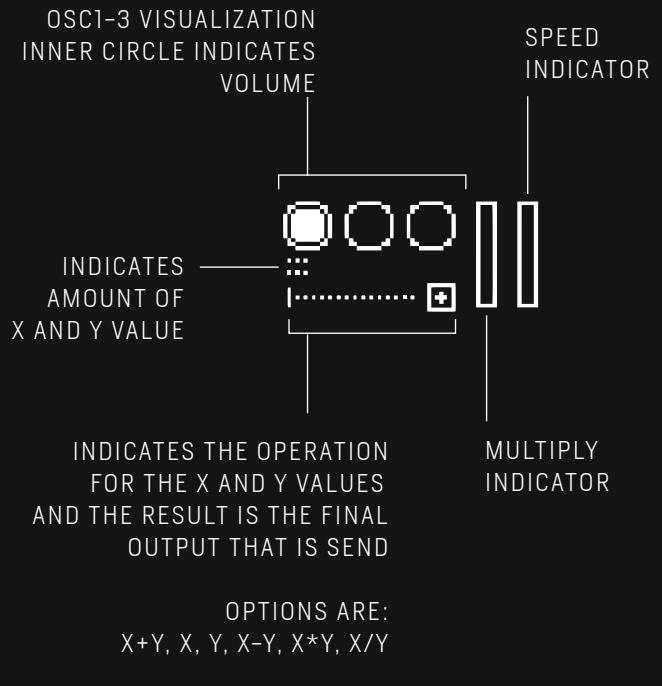


PLEASE NOTE: THE DUFFINGTON OSCILLATOR IS NOT A CHAOS THEORY BASED EQUATION, BUT IT IS A PRETTY SWEET ONE, SO I INCLUDED IT

HENON MAP

DISPLAY


NAME OF ACTIVE CHAOS THEOREM
CURRENT OUTPUT VALUE
DUFFINGTON
2.135
0.2
4.0
CURRENT VALUE »A« AND »B« SETTINGS
CURRENT VISUALIZATION (LINEAR OR MAP)
VIZUALIZE
VALUE DELTA
LEFT SQUARE FILLED INDICATES OSC COMMANDS ARE SEND
RIGHT INDICATES OSC COMMANDS ARE RECEIVED
CURRENTLY SELECTED PARAMETER


OSC1-3 VISUALIZATION INNER CIRCLE INDICATES VOLUME
SPEED INDICATOR
INDICATES AMOUNT OF X AND Y VALUE
INDICATES THE OPERATION FOR THE X AND Y VALUES AND THE RESULT IS THE FINAL OUTPUT THAT IS SEND
MULTIPLY INDICATOR
OPTIONS ARE:
X+Y, X, Y, X-Y, X*Y, X/Y

A
B EVERY CHAOS THEORY EQUATION HAS TWO VALUES (A, B) WHICH CAN BE MODIFIED TO GENERATE DIFFERENT RESULTS. DEPENDING ON THE EQUATION THE SMALLES CHANGE CAN YIELD DRAMATIC RESULTS

MULTIPL SINCE SOME EQUATIONS PRODUCE VERY SMALL NUMBERS YOU CAN MULTIPLY THE OUTPUT THAT IS PRODUCED WITH THIS VALUE TO RAISE IT

SPEED SETS THE GLOBAL SPEED VALUE

X-AMNT
Y-AMNT CHAOSOP OPERATES WITH 2D MAPS WHICH MEANS IT CALCULATES X AND Y VALUES. THE X AND Y VALUES ARE BALANCED WITH EACH OTHER. YOU CAN DEFINE THE AMOUNT OF X/Y WITH THESE PARAMETERS. (BY DEFAULT THE OUTPUTTED VALUE IS X+Y)

OSC1 VOL
OSC2 VOL
OSC3 VOL SETS THE VOLUME OF THE SPECIFIED OSCILLATOR IF YOU WANT TO USE CHAOSOP'S SUPERCOLLIDER ENGINE. OSC1 IS A SINE WAVE, OSC2 IS A TRINGALUAR WAVE AND OSC3 IS A SAWTOOTH

RECEIVE ACTIVATE/DEACTIVATE RECEIVING VIA OSC

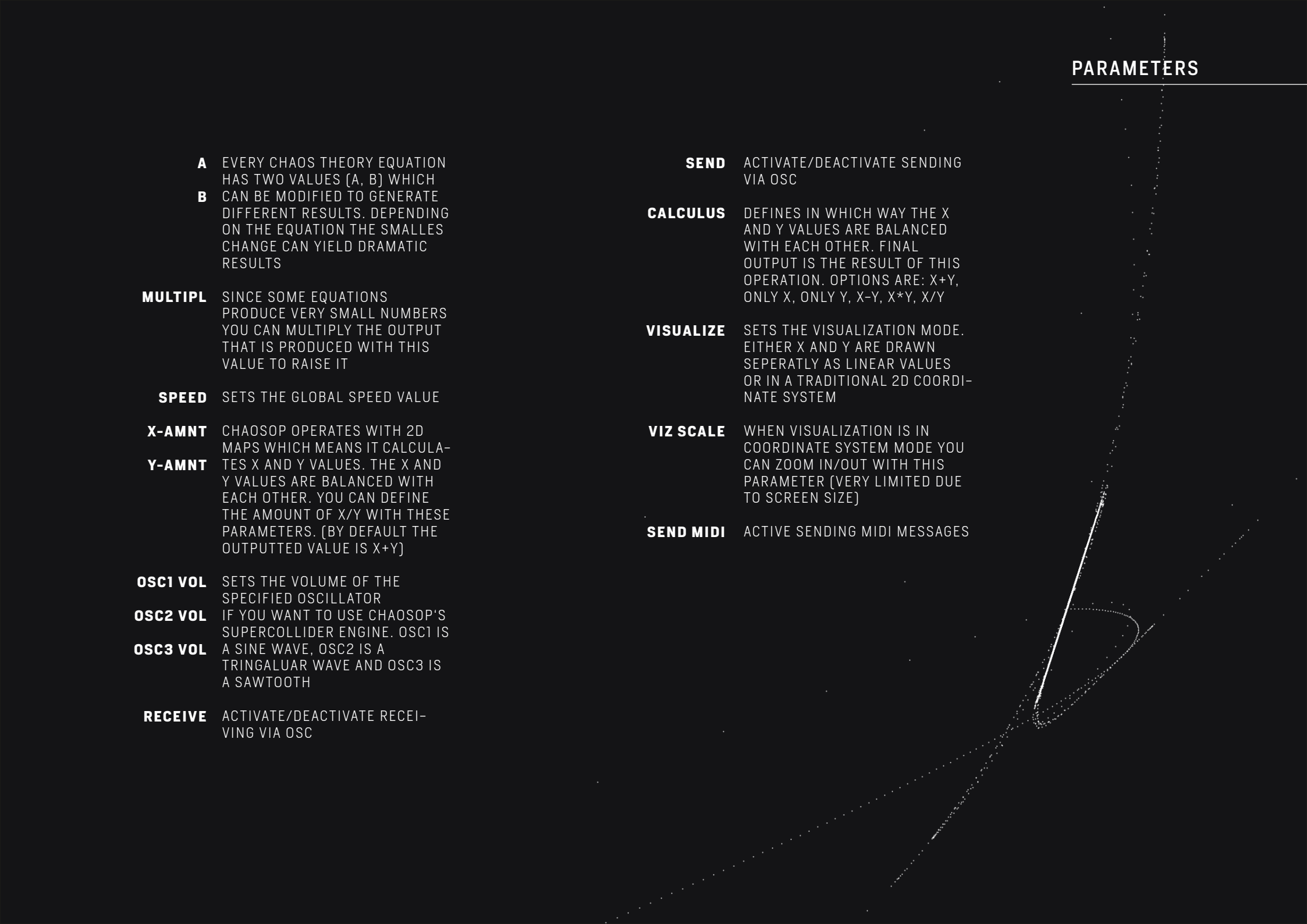
SEND ACTIVATE/DEACTIVATE SENDING VIA OSC

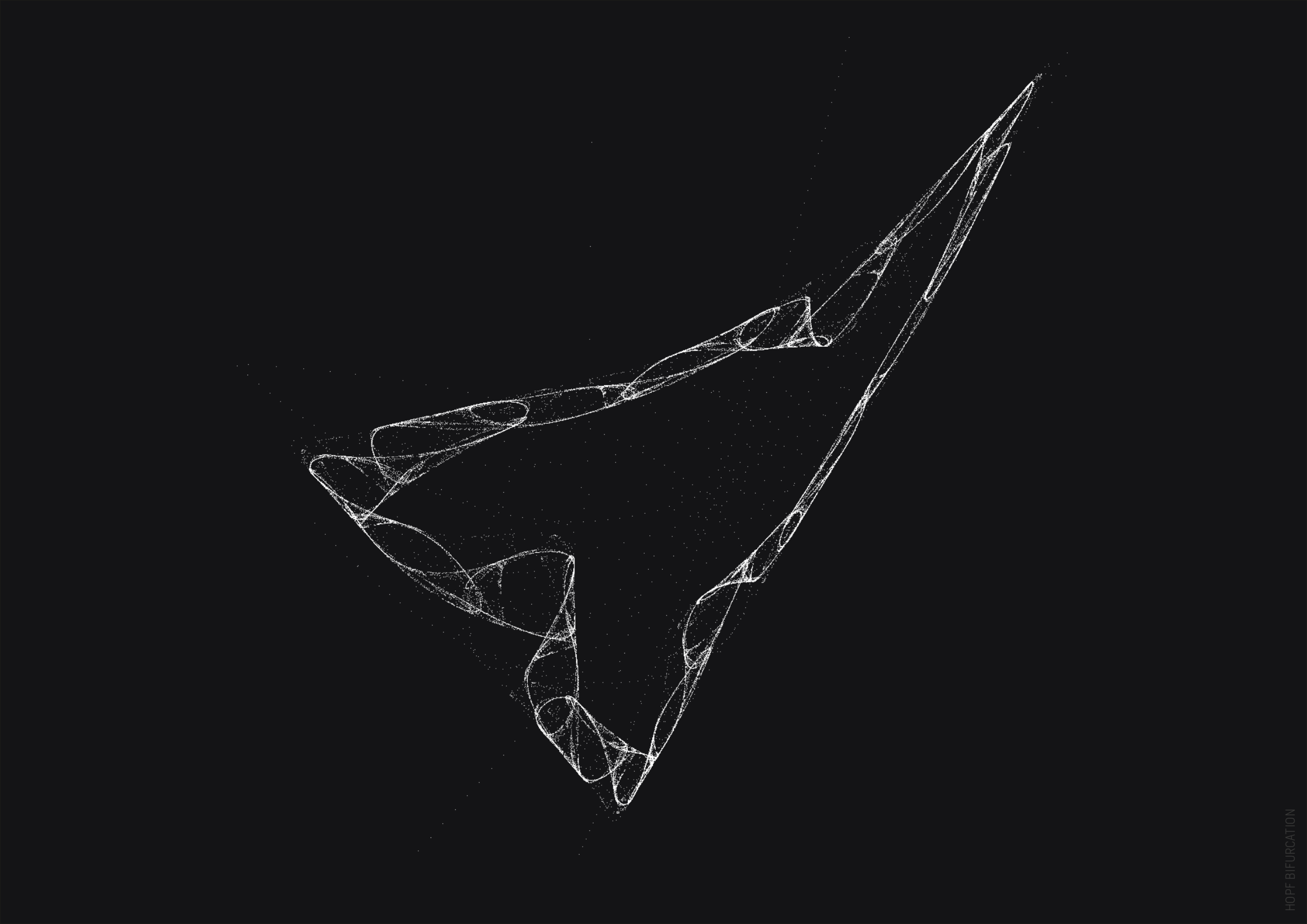
CALCULUS DEFINES IN WHICH WAY THE X AND Y VALUES ARE BALANCED WITH EACH OTHER. FINAL OUTPUT IS THE RESULT OF THIS OPERATION. OPTIONS ARE: X+Y, ONLY X, ONLY Y, X-Y, X*Y, X/Y

VISUALIZE SETS THE VISUALIZATION MODE. EITHER X AND Y ARE DRAWN SEPERATLY AS LINEAR VALUES OR IN A TRADITIONAL 2D COORDINATE SYSTEM

VIZ SCALE WHEN VISUALIZATION IS IN COORDINATE SYSTEM MODE YOU CAN ZOOM IN/OUT WITH THIS PARAMETER (VERY LIMITED DUE TO SCREEN SIZE)

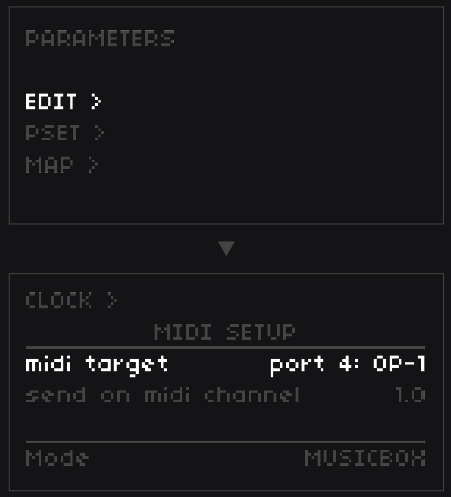
SEND MIDI ACTIVE SENDING MIDI MESSAGES





HOPF BIFURCATION

MIDI YOU CAN SELECT THE MIDI DEVICE YOU WANT SEND MIDI DATA TO IN THE »EDIT« MENU. ALSO YOU CAN CHOOSE WHICH MIDI CHANNEL YOU WANT TO SEND ON.



OSC TO SEND DATA VIA OSC YOU NEED TO SPECIFY A RECEIVER IP ADRESS. SINCE I HAVEN'T FOUND A CONVIENIENT SOLUTION TO INPUT THIS YOU HAVE TO DO THIS MANUALLY. OPEN THE SCRIPT IN MAIDEN AND GO TO LINE 28 AND ENTER THE IP ADRESS YOU WANT TO SEND TO. (DON'T DELETE THE QUOTATION MARKS).

BY DEFAULT RECEIVER PORT IS 9001. YOU CAN CHANGE THIS HERE TOO IF YOU WANT.

IF YOU WANT TO RECEIVE OSC IN ABLETON LIVE I HAVE MADE A MAX4LIVE DEVICE YOU CAN DOWNLOAD ON MY GITHUB PAGE.

HTTPS://GITHUB.COM/DEEG-DEEG-DEEG/NORNS_OSC_2

```
22  --
23  --
24  MusicUtil = require("musicutil")
25  engine.name = 'ChaosOp'
26
27
28  osc_dest = {"192.168.1.1",9001}
29
30
31  ------ MIDI
32
33  midi_device = {} -- container for connected midi devices
34  midi_device_names = {}
35  target = 1
```

HAVE FUN!

I HOPE YOU HAVE FUN WITH THIS SCRIPT AND ENJOY USING IT! HOPEFULLY IT BRINGS YOU INSPIRATION AND GOOD TIMES CREATING BEAUTIFUL SOUNDS!
CHEERS!

@deeg_deeg_deeg
github.com/deeg-deeg-deeg/

THIS CODE IS PUBLISHED UNDER THE MIT LICENSE