RANDOM ATTRACTORS ART v4.1

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(Sorry for my English)

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INTRODUCTION

This application generates 2D nice random attractors pictures.

A Random Attractor “curve” is generated as follow:

There is a Random Start point x(0),y(0).

There is a given Number of Points (also called iterations)

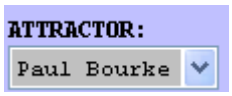
There is a set of Random Parameters V(0), V(1), V(2), ... V(N)

Each Point Position X(I),Y(I) is calculated with a formula that is like this:

$$X(I)=V(0)+V(1)*X(I-1)+V(2)*Y(I-1)$$
$$Y(I)=V(3)+V(4)*X(I-1)+V(5)*Y(I-1)$$

Commands

ATTRACTOR



Here we can choose the Attractor Formula.

Where XX,YY are PtX(i-1),PtY(i-1)

Paul Brouke

PtX(i) = V(0) + V(1) * XX + V(2) * XX * XX + V(3) * XX * YY + V(4) * YY + V(5) * YY * YY

PtY(i) = V(6) + V(7) * XX + V(8) * XX * XX + V(9) * XX * YY + V(10) * YY + V(11) * YY * YY

Clifford

PtX(i) = Sin(V(0) * YY) + V(2) * Cos(V(0) * XX)

PtY(i) = Sin(V(1) * XX) + V(3) * Cos(V(1) * YY)

De Jong

PtX(i) = Sin(V(0) * YY) - Cos(V(1) * XX)

PtY(i) = Sin(V(2) * XX) - Cos(V(3) * YY)

De Jong variation : Johnny Svensson

PtX(i) = V(3) * Sin(V(0) * XX) - Sin(V(1) * YY)

PtY(i) = V(2) * Cos(V(0) * XX) + Cos(V(1) * YY)

Sprott

PtX(i) = V(0) + XX * (V(1) + V(2) * XX + V(3) * YY) + YY * (V(4) + V(5) * YY)

PtY(i) = V(6) + XX * (V(7) + V(8) * XX + V(9) * YY) + YY * (V(10) + V(11) * YY)

Philp Ham

PtX(i) = Tan(XX) * Tan(XX) - Sin(YY) * Sin(YY) + V(0)

PtY(i) = (V(3) + 3) * Tan(XX) * Sin(YY) + V(1)

ABS

PtX(i) = V(0) + V(1) * XX + V(2) * YY + V(3) * Abs(XX) + V(4) * Abs(YY)

PtY(i) = V(5) + V(6) * XX + V(7) * YY + V(8) * Abs(XX) + V(9) * Abs(YY)

POW

PtX(i) = V(0) + V(1) * XX + V(2) * YY + V(3) * Abs(XX) + V(4) * Abs(YY) ^ (V(10))

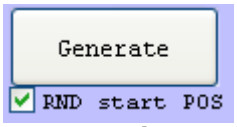
PtY(i) = V(5) + V(6) * XX + V(7) * YY + V(8) * Abs(XX) + V(9) * Abs(YY) ^ (V(11))

SIN

PtX(i) = V(0) + V(1) * XX + V(2) * YY + V(3) * Sin(V(4) * XX) + V(5) * Sin(V(6) * YY)

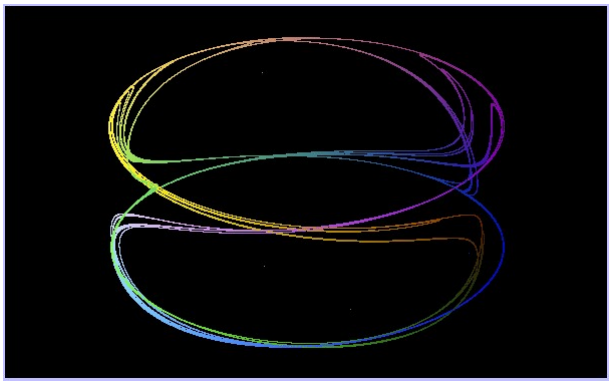
PtY(i) = V(7) + V(8) * XX + V(9) * YY + V(10) * Sin(V(11) * XX) + V(12) * Sin(V(13) * YY)

GENERATE



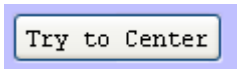
Once we choose the Attractor formula we can start generate a new random “curve” with new random V() values and (if checkbox RND start POS is checked) new start position value.

We must wait since some values brings points coordinates to infinite values, then a preview of curve is rendered.



Now, if we like this “curve” we can continue with “Cool Render”, otherwise we can click again “Generate” to generate a new random “curve”.

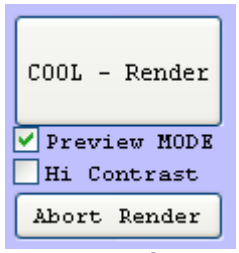
TRY to CENTER



Sometimes we can notice that most pixles are placed by a side/corner of the Image.

Clicking here the curve should self center.

COOL RENDER



Here start the image creation process. The time it takes is variable.

The output Image is saved in “OUT” folder.

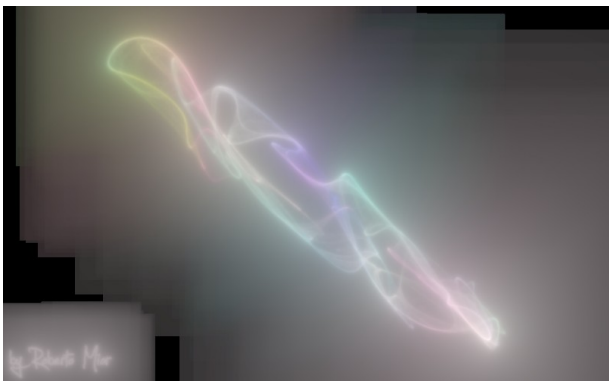
If you change idea and don't want to wait till the end of renderization process click “Abort Render”.

Contrast

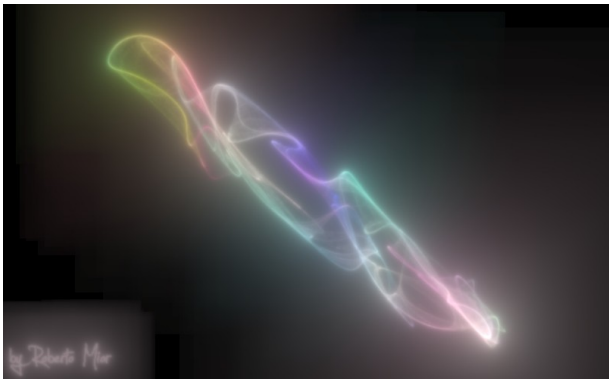
Since Ver **4.1** Custom contrast has been implemented.

Here you can see some Examples of the same curve rendered with different “contrast” values:

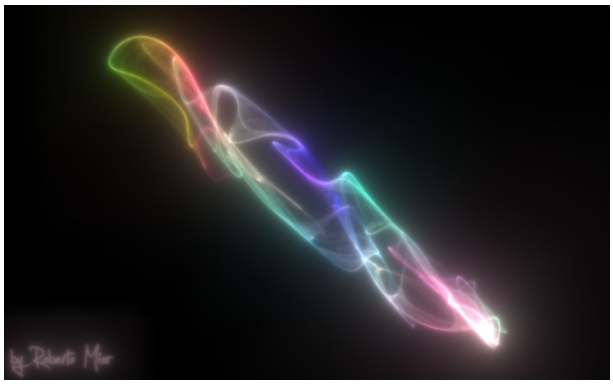
Contrast **12**



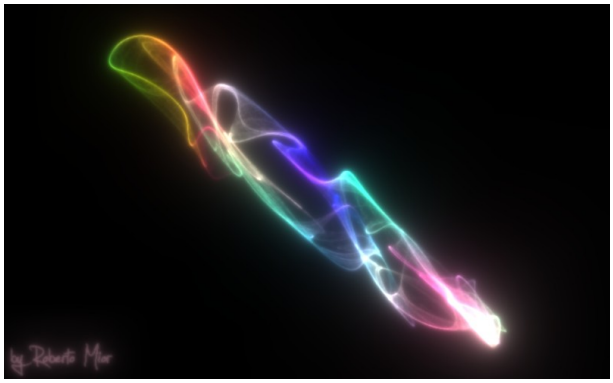
Contrast **25**



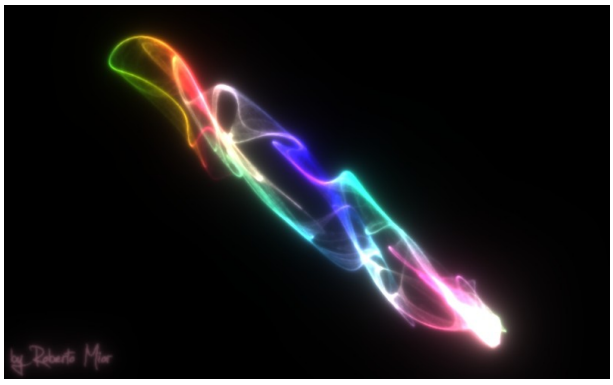
Contrast **50**



Contrast **75**

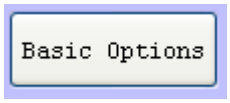


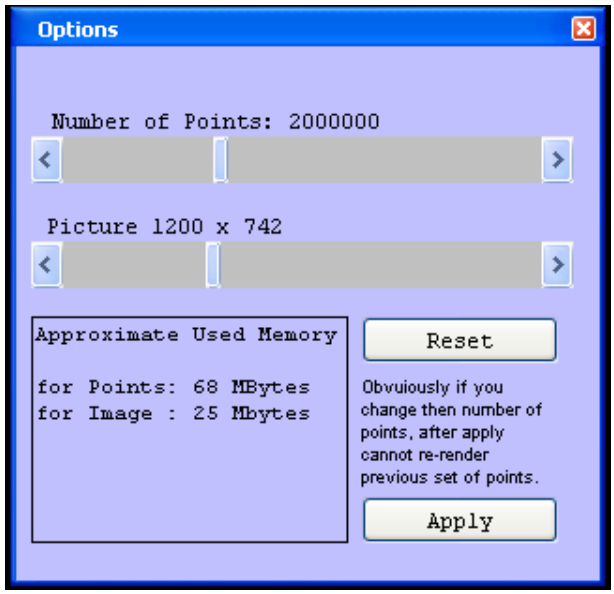
Contrast **100**



Suggested/default value = 50.

BASIC OPTIONS



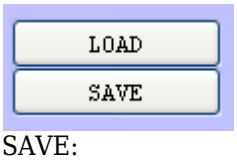


Click “Basic Options” to change the Number of Points and/or Image Size.

When “Number of point is Changed” and “Apply” is clicked we cannot “Cool Render” again the “curve”.

If we want to render this curve in different size we can change “picture size” with slidebar , click “Apply” and then click “Cool Render”.

LOAD / SAVE



SAVE:

To click only after “COOL Render”.

If we like a result we can save it by clicking here. Then, with Load button we can load it at any time and “cool render” it again.

This is useful to save our favorites curves and to re-render them at different sizes.

E.G:

-"SAVE" and save your nice curve.

-Exit Application.

-Run Application.

-"Basic Options" to change the output Size

-"LOAD" to load curve.

-"Cool Render"

The same curve can be rendered with different sizes. Its look changes by changing image size.

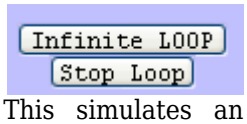
LOAD:

Click here to load a curve.

Change image size with "Basic Options" (This can be done either Before or After "LOAD")

Then click "Cool Render" to Render it.

INFINITE LOOP

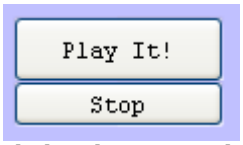


This simulates an infinite "GENERATE" and "COOL RENDER" buttons click.

Yes, not all generated and rendered pictures will be nice, but you can discard them from the OUT folder.

Click "Stop Loop" to terminate this loop.

PLAY IT

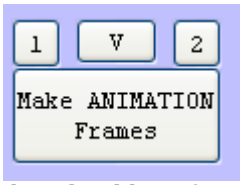


Click "play it" to play the set of generated points as "music".

X and Y determinate Note and Notes Durations.

Click "STOP" to stop the sound. Suggested when Application is performing other tasks.

ANIMATION



This should perform the animation from a curve to a slightly different curve.

How to do:

-"Generate" a curve

-Click "1" to set this as the 1st curve

-Click "V" to change the V(0),V(1)...V(N) values. A new slightly different curve will appear.

-Can click "V" more than once, but sometimes it causes "overflow" or a bad curve.

-Click "2" to set this slightly different curve as the 2nd curve.

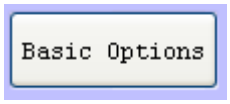
-Make Animation . Click here to render frames between 1st and 2nd curve. (it's prompted for how many frames)

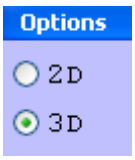
Animation Frames are saved in ANIM folder.

[it could take long time]

[NOT TESTED IN 3D MODE]

3D





To activate the 3D mode click "basic options" and then select "3D".

In 3D mode the "Attractor formulas" to choose from are different.

It's like 2D but a new "Z" axis

3D Animation

Click here to make a 3D animation.

It's prompted for the number of steps to complete a full 360° Rotation animation. EG: n=16 steps correspond to 360/16 = 22.5° per frame.

The animation is 4 times a full 360° rotation.

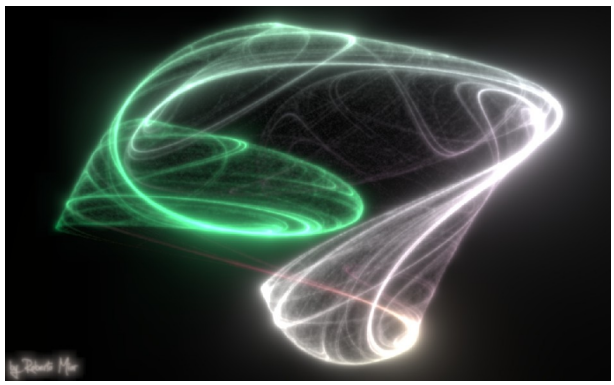
Then it's prompted for the type of rendering.

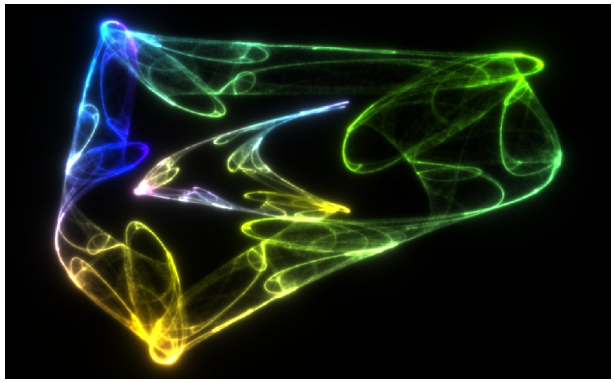
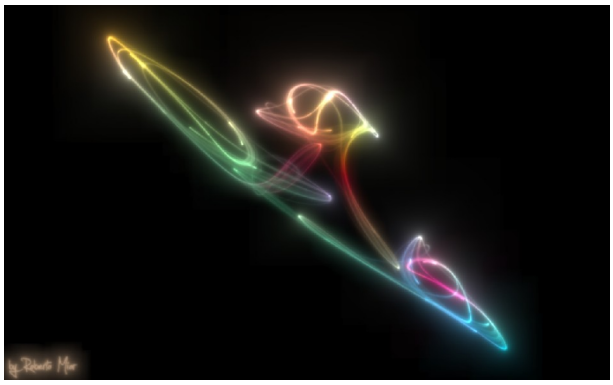
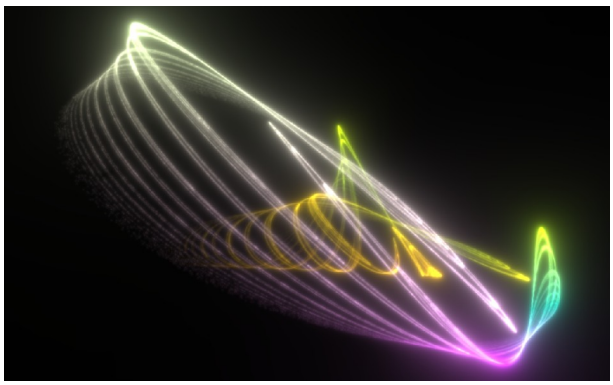
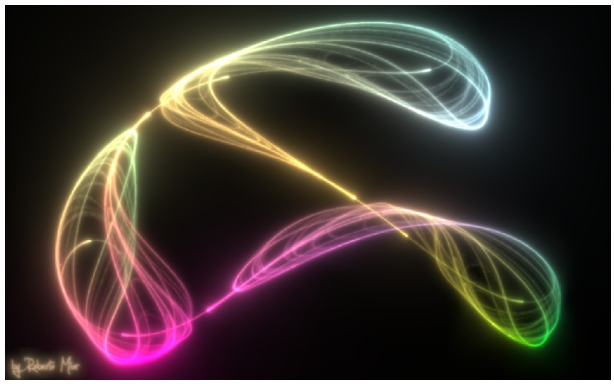
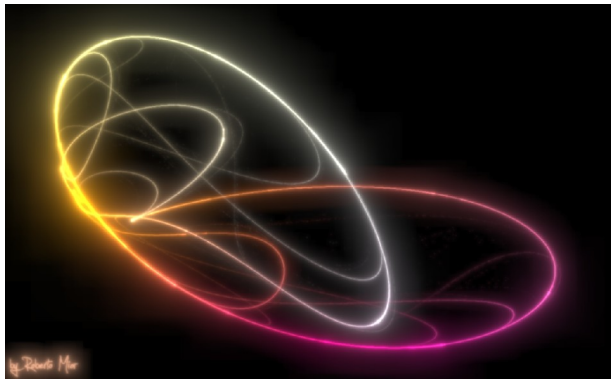
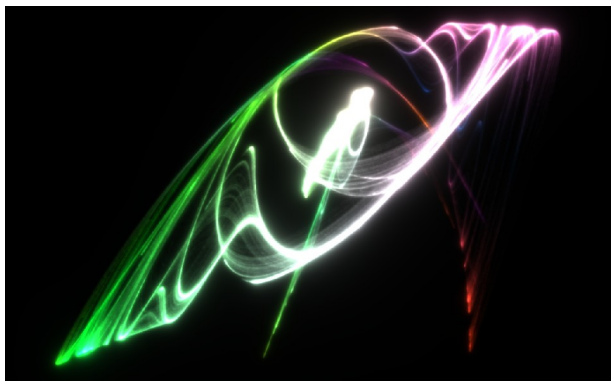
For Preview the 3D Animation at [“Cool Render” mode] you have to answer “No”

If you answer “yes” every frame will be rendered as “Cool-Render” quality.

Frames are saved in “ANIM” folder.

When process is complete you can make a Video with some software like VirtualDub.





SAMPLES