

JWildfire tutorial on: iflamez

by [thargor6](http://thargor6.deviantart.com/) (<http://thargor6.deviantart.com/>)

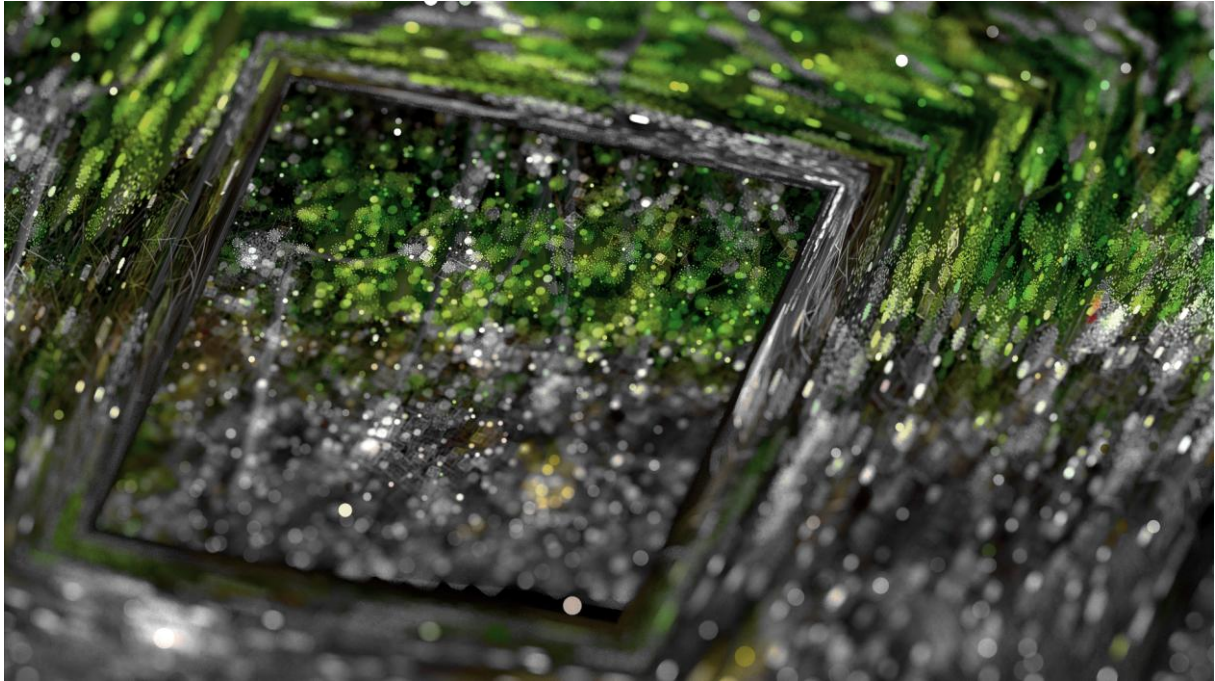
Version 0.1

This tutorial describes how to use the new "iflame"-feature introduced with version 2.22.

All you will need is a recent copy of JWildfire (Version 2.22 R4 or higher is required) and some (own) flames to play around.

Table of Contents

1 What the hell is an "iflame"?	3
1.1 Parameter fields	3
2 Implementation as flame-fractal	4
3 Description of parameters	5
2.1 Picture-related parameters	5
2.2 Flame-related parameters	6
4 A simple example	7
4.1 Create the main-fractal	8
4.2 Select the picture and center the base shape	8
4.3 Adjusting edges	9
4.4 Playing with erode-effect to smooth the edges	10
4.5 Fade in/out the base image	10
4.6 Adjusting the flame-sizes	11
4.7 Add more variety: modify size-variation	12
4.8 Adding a parameter field	13
4.9 Apply the "finishing touch"	16



1 What the hell is an "iflame"?

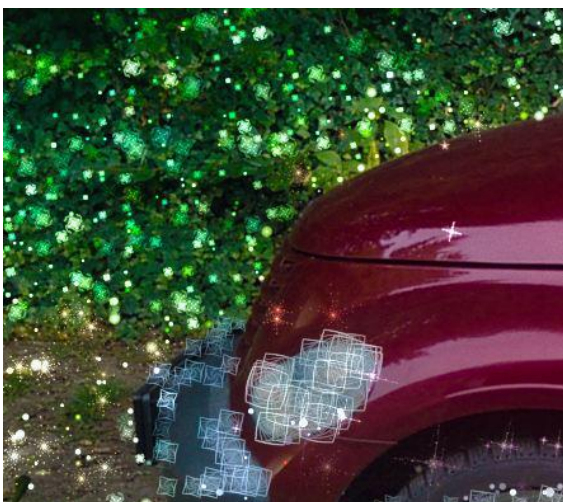
An "iflame" is some kind of a symbiosis of computer images and flame fractals. The basic idea is to build one huge fractal by exchanging "important" pixels of an image by small fractals.

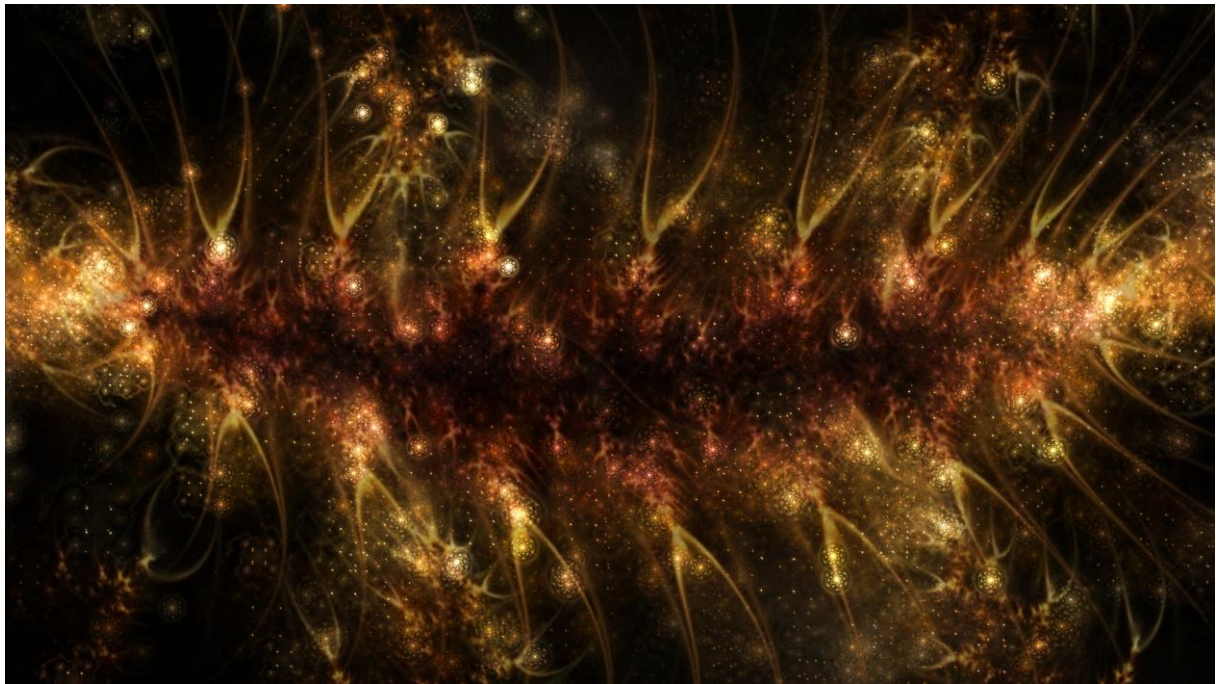
I. e., an iflame is made by a picture (which may be another fractal or any other image) and a number of base-fractals.

The base-fractals should have rather simple shapes, should be in monochrome color and occupy only a small area of the screen. You can use multiple fractals per flame, and specify numerous parameters for each of this flames, like size or variation in size and orientation.

1.1 Parameter fields

Each base shape can have up to three parameter fields assigned, i. e. another map which specifies the local change of a flame-parameter. This makes it possible to change the shape depending on position inside the iflame. It is possible to vary any flame parameter this way, or in famous words: "The Possibilities are Infinite" :-)

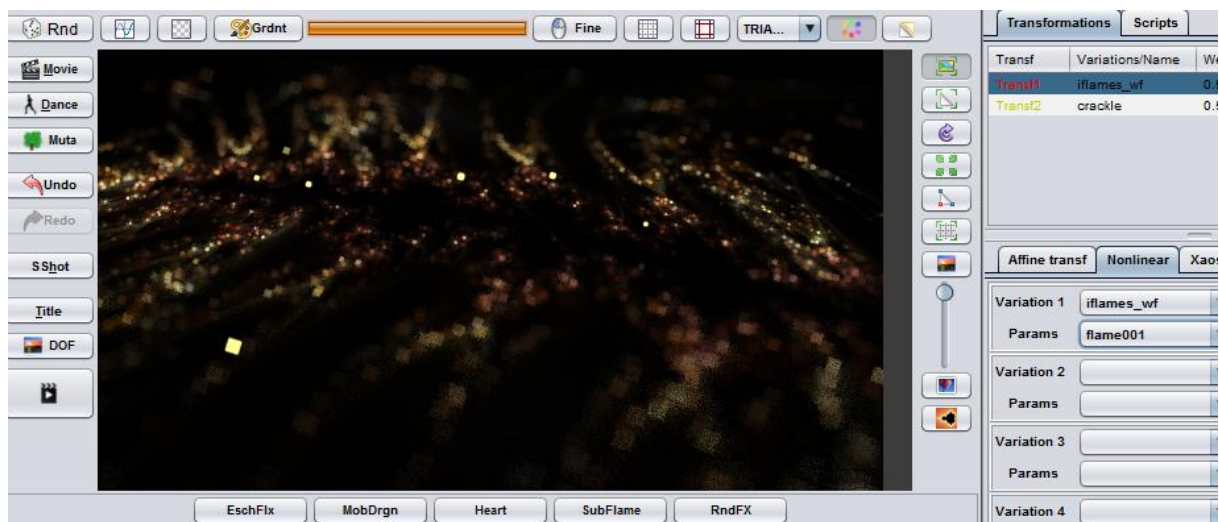


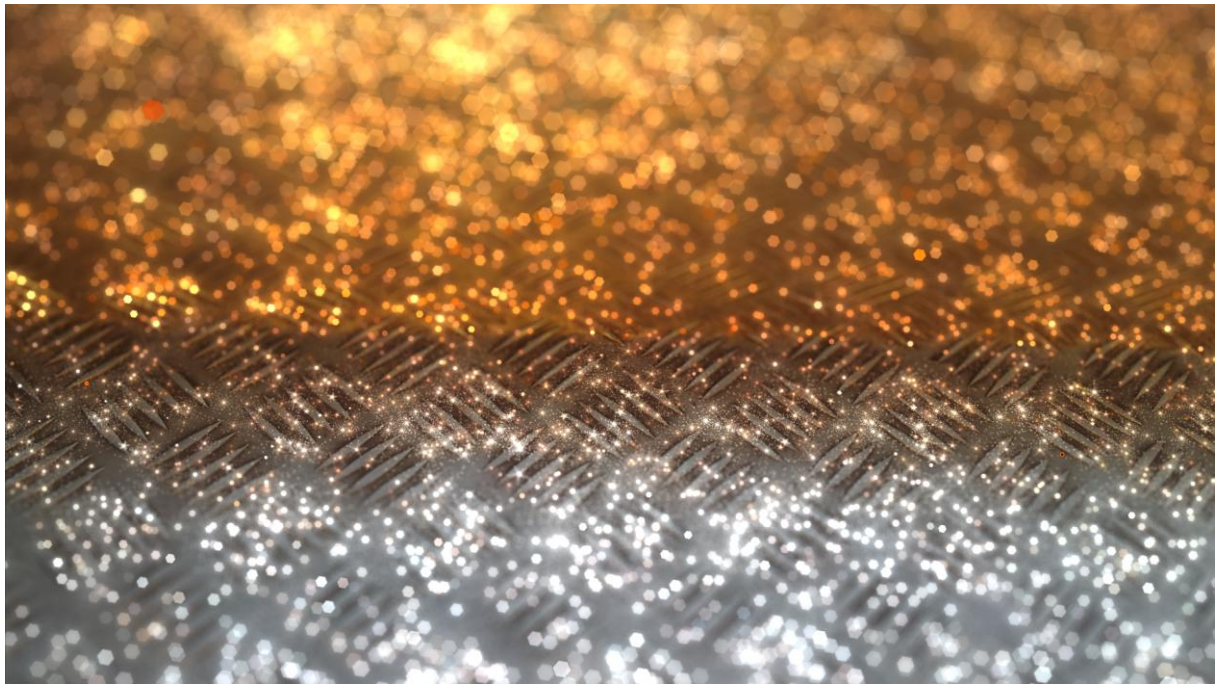


2 Implementation as flame-fractal

To make things simple (and quick to implement) the current implementation comes just as a regular variation called "iflames_wf". It is really heavy-weighted and comes with about 100 parameters, but this way an iflame is just a flame and can be handled like any other flame.

I.e., you can use the same workflow and tools for creating images as you use for regular flames, and you can even add more effects to an iflame, like DoF and bokeh.





3 Description of parameters

Parameters come in two categories: Related to the picture and related to the small flames

2.1 Picture-related parameters

1. image and image-size:
 - **image_filename**: Filename of the base-picture to use
 - **scale_x**: horizontal size-adjust of the image
 - **scale_y**: vertical size-adjust of the image
 - **offset_x**: horizontal offset-adjust of the image
 - **offset_y**: vertical offset-adjust of the image
2. edge/structure -detection:
 - **conv_north**: detect edges into north-direction (default: ON)
 - **conv_east**: detect edges into east-direction (default: ON)
 - **conv_south**: detect edges into south-direction (default: OFF)
 - **conv_west**: detect edges into west-direction (default: OFF)
 - **erode**: apply an erode-image-processing-effect before edge-detection, may produce some cool effects (default: OFF)
 - **erode_size**: size-parameter of the erode-effect
 - **structure_threshold**: threshold for "seeing" edges, the lower, the more edges are detected
3. blending:
 - **image_brightness**: brightness of the base-picture (which is blended as flat structure over the fractal-structure)
 - **iflame_density**: render-density of the fractals in comparison the base-picture
 - **iflame_brightness**: brightness of the fractals
4. small-fractal-generation:
 - **structure_density**: density (number) of generated small fractals based on the picture
 - **shape_distribution**: distribution of generated flames:

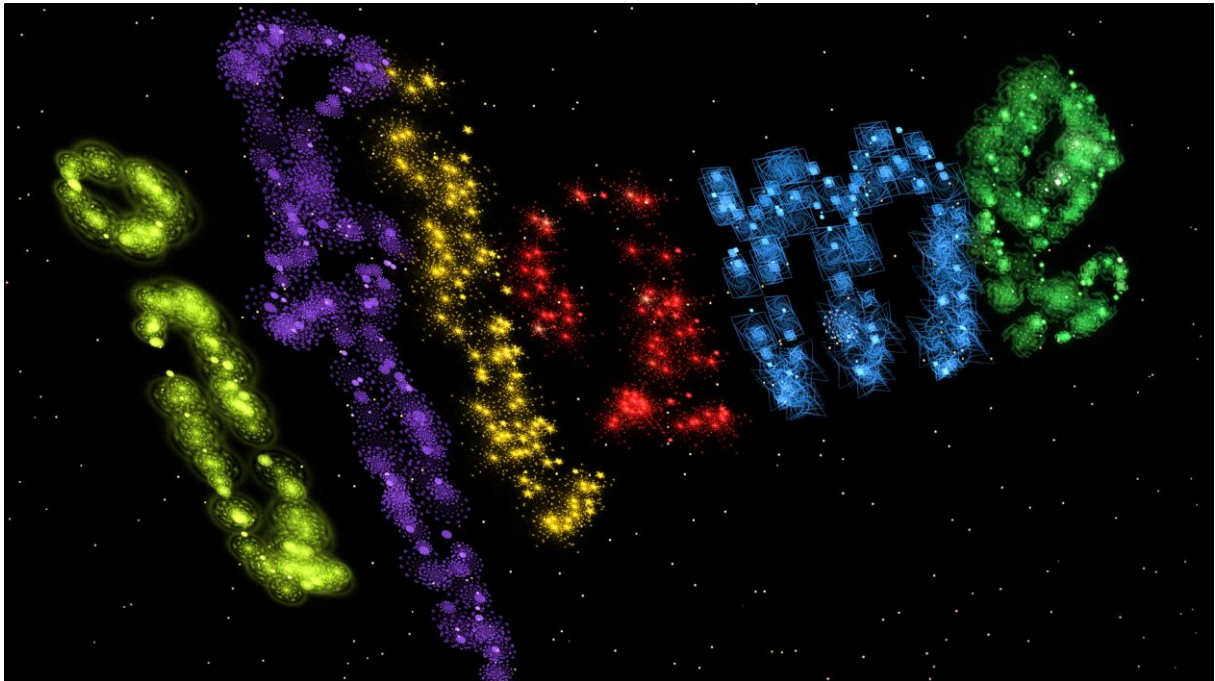
- 0: pure random distribution
- 1: distribution regarding hue-levels of the pictures (default value)

2.2 Flame-related parameters

Currently, you can use up to 6 flames as base-shapes inside one iflame. Each flame has its own subset of parameters, so the parameters all end with an number specifying the flame to which they do belong. Those numbers contain of three digits, starting with "001".

E.g., the parameter "flame_min_val005", is the parameter "flame_min_val" of the 5th flame.

1. flame size and orientation:
 - **flame_size**: base-size of the flame
 - **flame_size_var**: variation of size in percent (per default all generated shapes have a different size for a more interesting look)
 - **flame_rotate**: base orientation of the flame
 - **flame_rotate_var**: variation of orientation in percent (per default all generated shapes have a different orientation for a more interesting look)
 - **flame_centre_x**: horizontal adjust for centering the flame (many flames are not naturally centered)
 - **flame_centre_y**: vertical adjust for centering the flame (many flames are not naturally centered)
2. parameter-fields:
 - **flame_param1_map**: image to use as 1st parameter map (brightness level of 0.0 (black) corresponds per default to parameter value of null, a brightness level of 255 (white) corresponds per default to parameter value of 1.0)
 - **flame_param1_min**: specifying lower bound of parameter range (defaults to 0)
 - **flame_param1_max**: specifying upper bound of parameter range (defaults to 0)
 - **flame_param2_map**: same as **flame_param1_map**, but for 2nd parameter map
 - ...
5. flame:
 - **flame**: paste in any flame-params
 - **flame_min_val**: min-value for the distribution-algorithm (for example, when using the hue-distribution-algorithm, the **flame_min_val** -and **flame_max_val**-parameters specify a hue-range. If a point in the picture is inside this hue-range, then this base-flame is chosen)
 - **flame_max_val**: max-value for the distribution-algorithm



4 A simple example

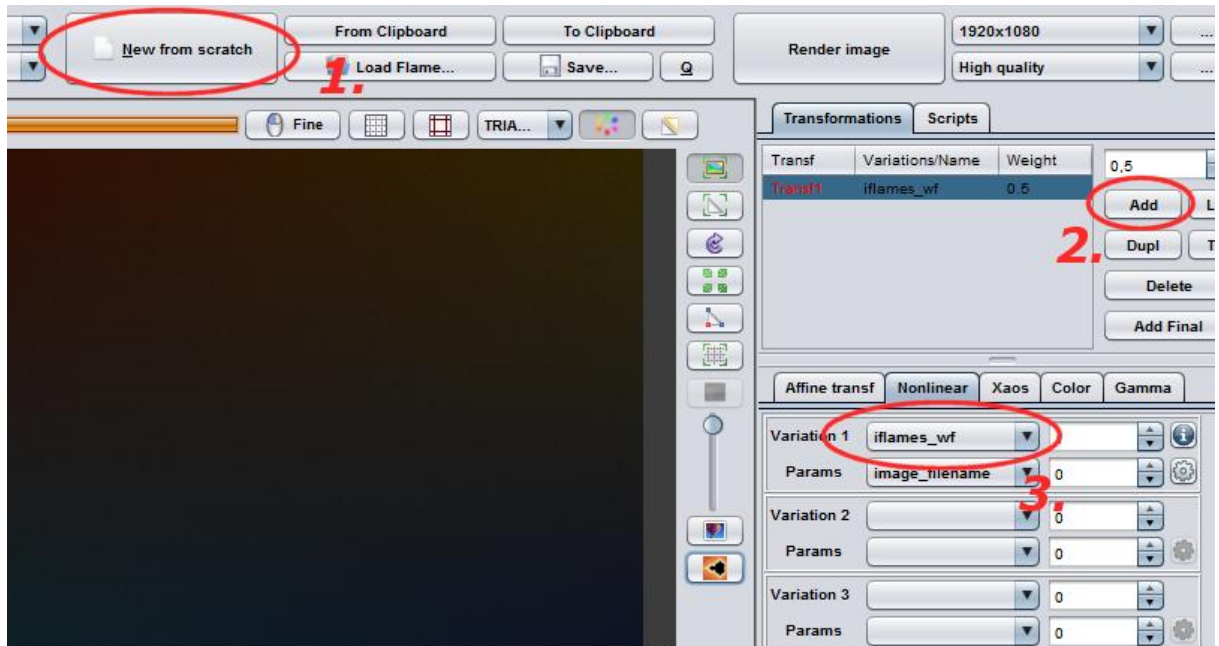
We start with an example-image I prepared, and we will use only use the default base-fractals. But, even if it is a simple example, it should show you all the stuff you will need to create more complex iflames.

The example-image provided looks like this:



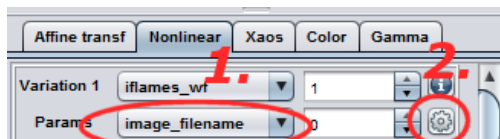
4.1 Create the main-fractal

- In the main editor press the "New from scratch"-button to create a new and empty flame-fractal
- On the "Transformations"-tab press the "Add"-button to add a new transform
- Enter the "Transformations->Nonlinear"-tab, select the "Variation1"-listbox (with "Linear" selected) and press the "i"-key. The "iflames_wf"-variation should then be selected instead of "linear3D"

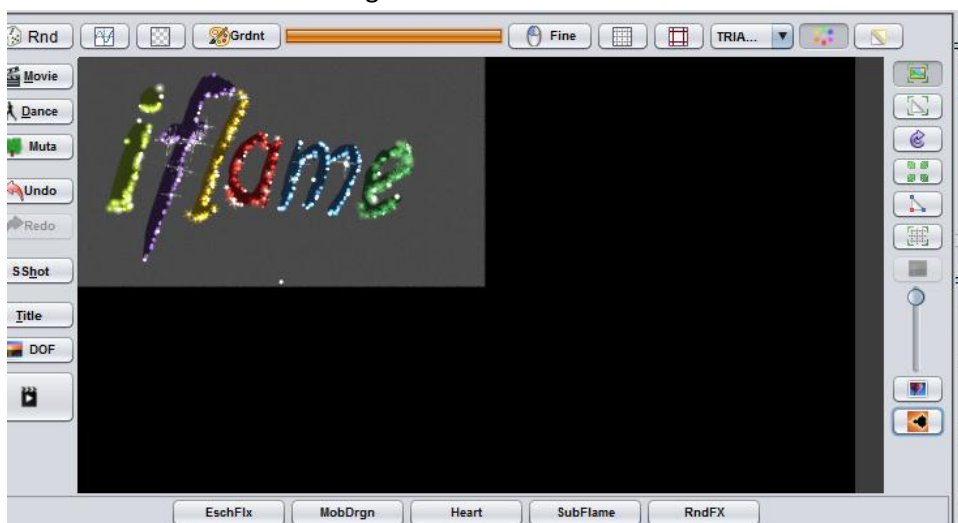


4.2 Select the picture and center the base shape

- Select the parameter "image_filename" and press the gear-like-symbol right of it to select the base-picture. Use the provided example image (iflame.png)



- You should end with something like this:



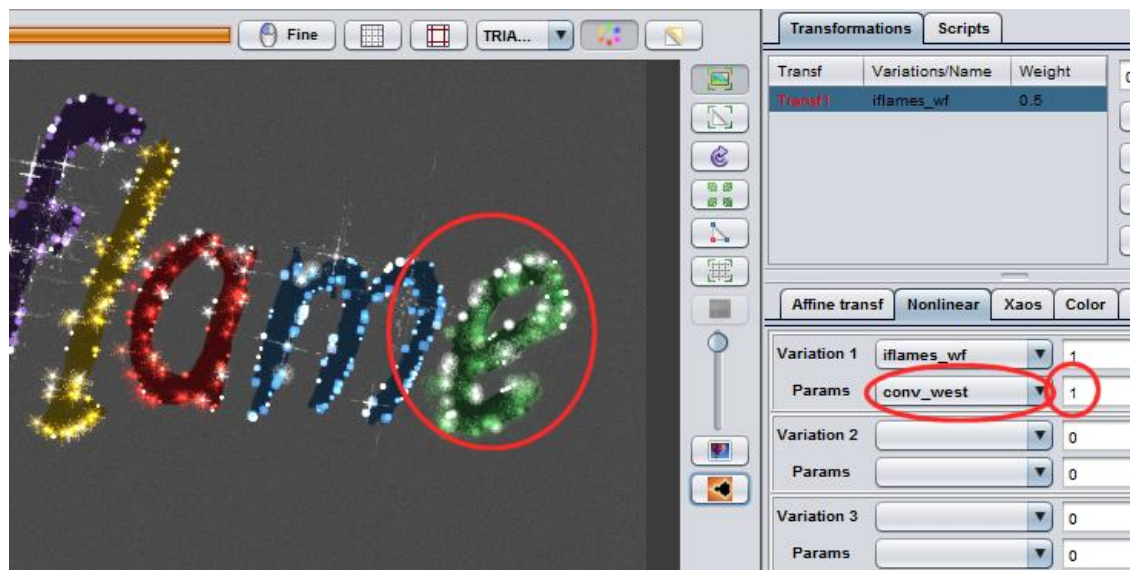
- Use the mouse to drag in to center and the mouse wheel to zoom-in, so that it finally occupies the view-port. You may also use the `scale_x`, `scale_y`, `offset_x` and `offset_y`-parameters of the variation if you prefer. Finally, you should end with something like this:



- Save the flame

4.3 Adjusting edges

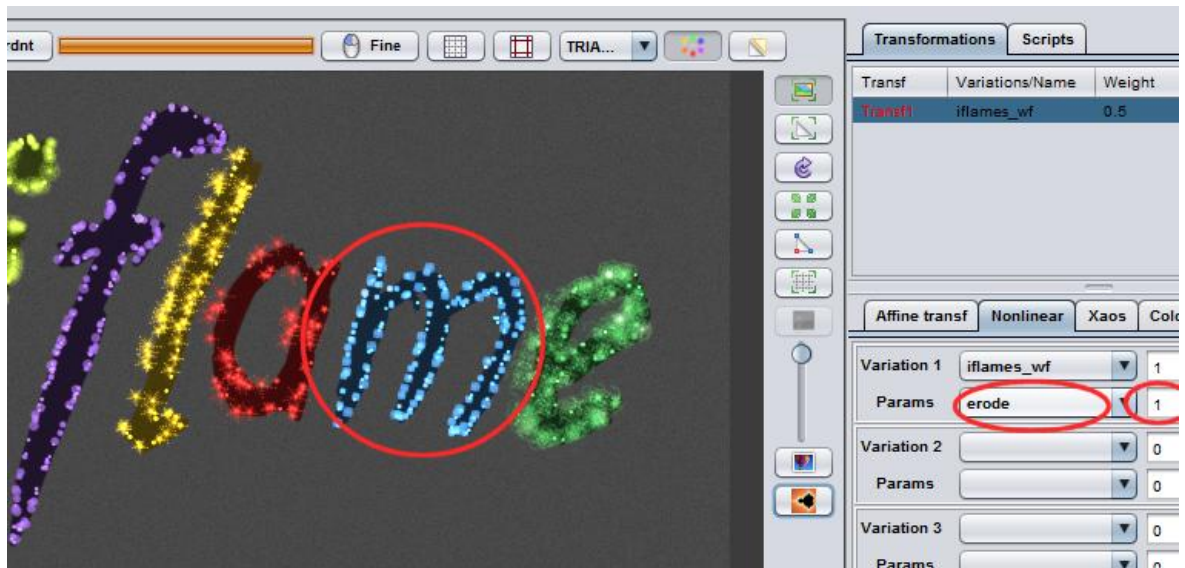
- You see that some of the edges of the image are occupied by some small fractals. But not all edges. Let's fix this, select the parameters "`conv_south`" and "`conv_west`" and set their values to 1.



- Save the flame

4.4 Playing with erode-effect to smooth the edges

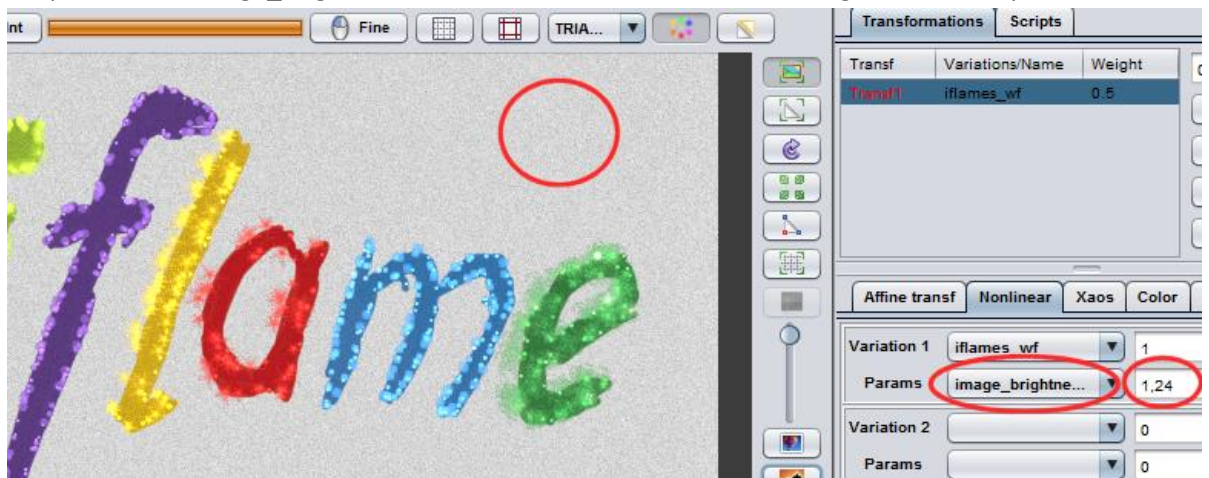
- Sometimes it can help to apply an erode-effect to the generated structure in order to create a more clear structure. Set the value of the "erode" to 1.



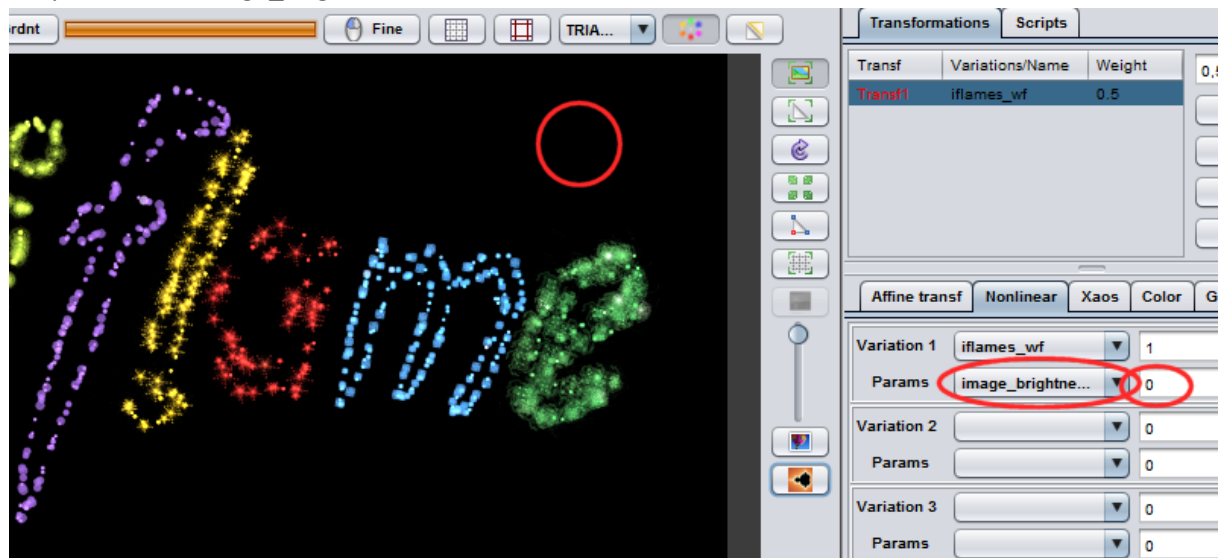
- Save the fractal

4.5 Fade in/out the base image

- Now as we have sharp edges we could fade out the base image. But let's fade in it first. Set the parameter "image_brightness" to a value about 1.0 to see the image more clearly.



- But, you can also turn it completely off, which we want to do now. Please the the value of the parameter "image_brightness" to 0.0.

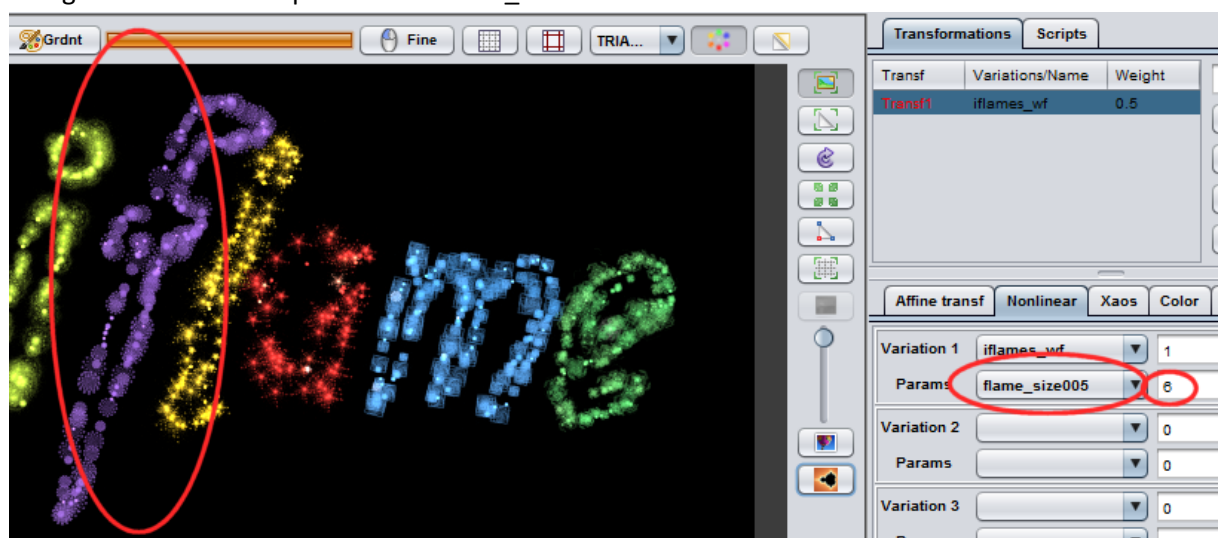


- Save the flame

4.6 Adjusting the flame-sizes

You see that some flame-shapes are smaller than others. The green shapes at the "e"-letter are the greatest, and the small rect-shaped fractals at "f" are rather small. Let use adjust this:

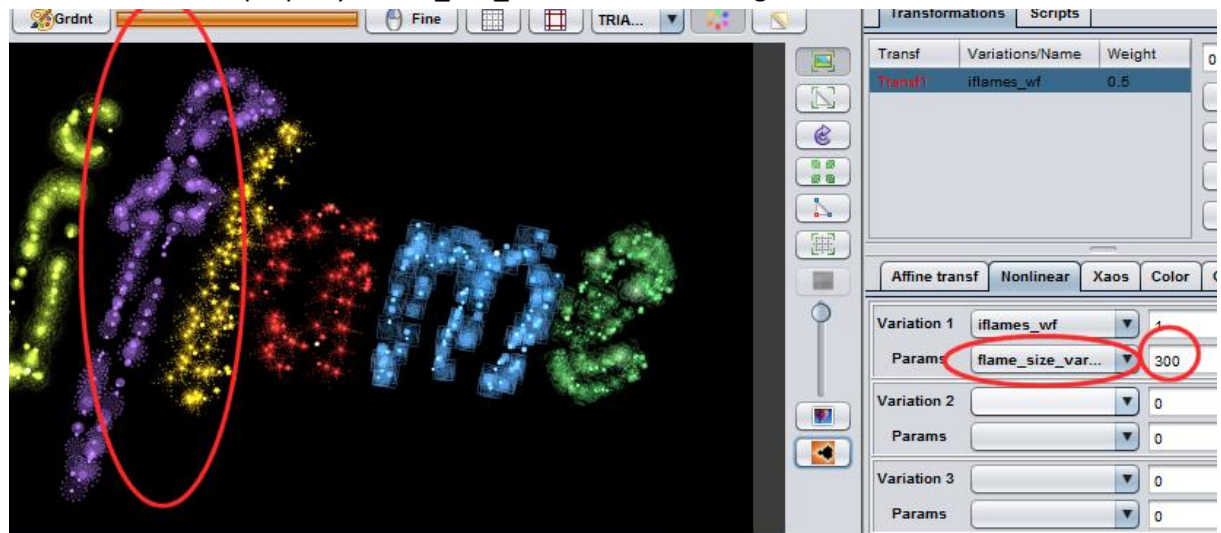
- change the value of the parameter "flame_size001" to 3.2
- change the value of the parameter "flame_size002" to 3.0
- change the value of the parameter "flame_size003" to 1.4
- change the value of the parameter "flame_size004" to 5.0
- change the value of the parameter "flame_size005" to 6.0



4.7 Add more variety: modify size-variation

Currently each base-shape is varied in size by a maximum of 200 percent. Let's increase this value to have more shapes with more different sizes:

- Set the value of the property "flame_size_var001" to something around 300
- Set the value of the property "flame_size_var002" to something around 300
- Set the value of the property "flame_size_var003" to something around 300
- Set the value of the property "flame_size_var004" to something around 300
- Set the value of the property "flame_size_var005" to something around 300

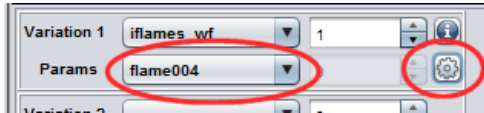


- You can do something similar with the flame_rotate_var-parameters if you wish
- Save the flame

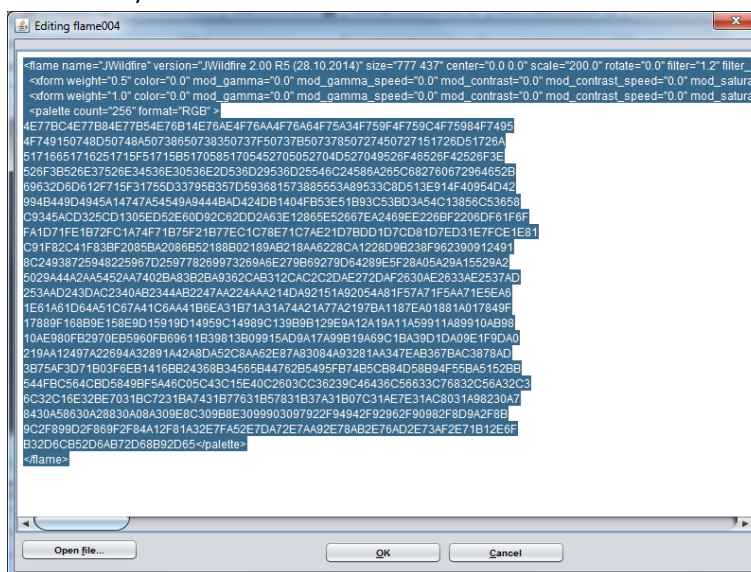
4.8 Adding a parameter field

The rect-shaped fractal in the "m"-letter of our iflame would be a nice example for adding a parameter-field. But, you can play with any of the shapes, of course. And add up to three parameter-fields per base-fractal. But, let's start with a simple example.

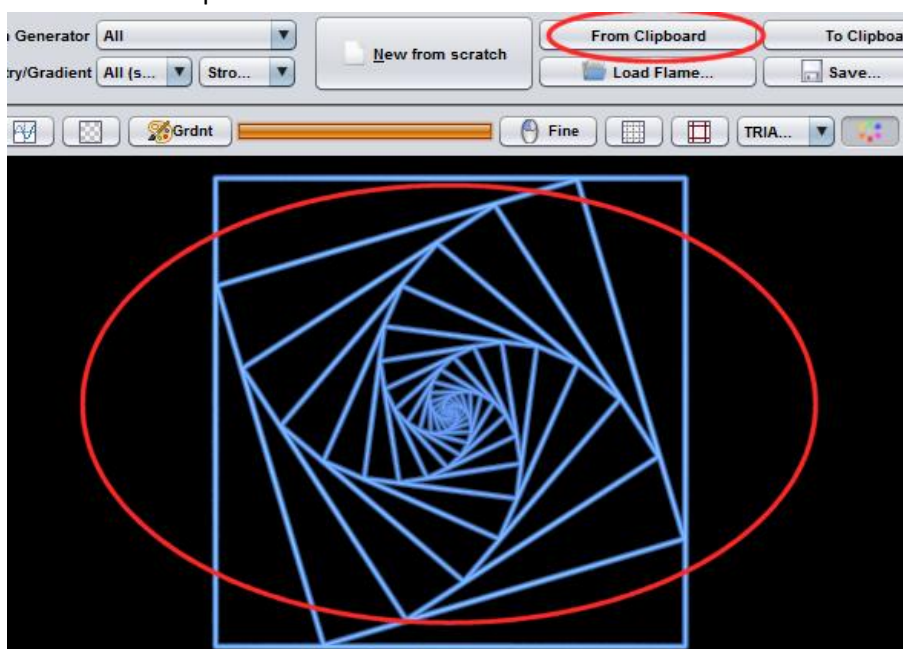
- First, let's extract and play with the base-shape used at letter "m". It is fractal "004", so select the property "flame004" and press the gear-symbol right to it.



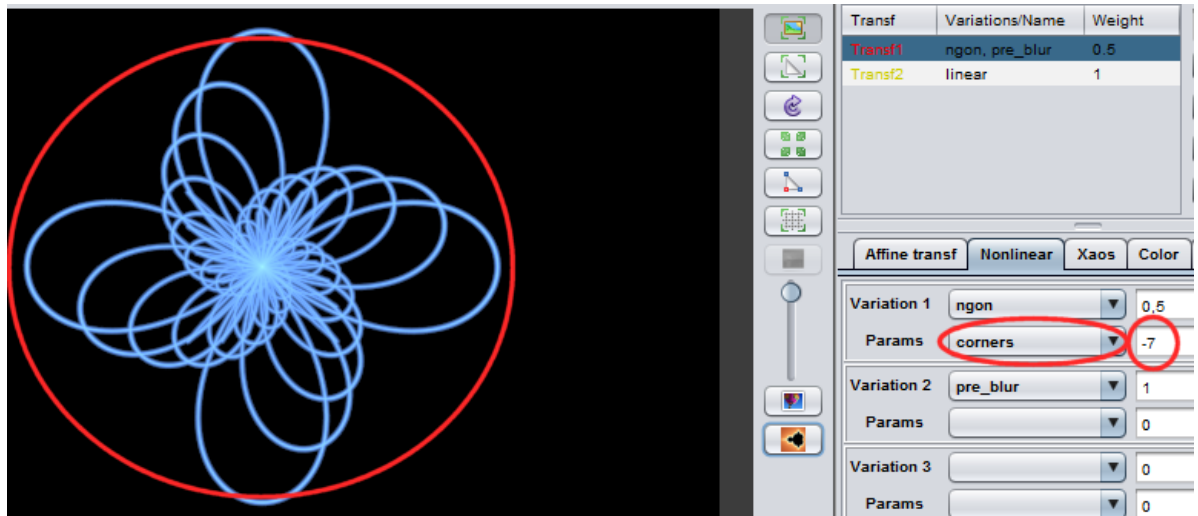
- This opens the window with the flame-params. Select the complete text (e.g., by pressing <Ctrl>+<A> or by using the mouse) and copy the content into the clipboard (e.g., by pressing <Ctrl>+<C>)



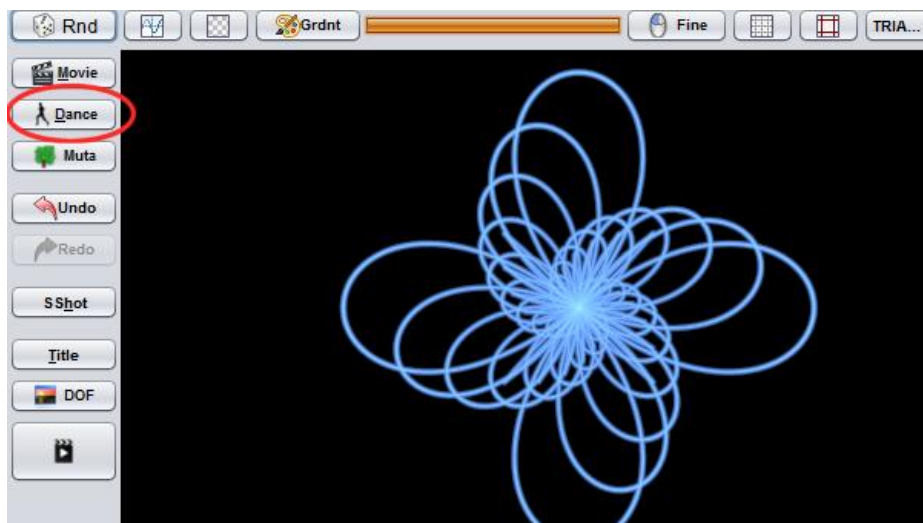
- Now press the "From clipboard"-button to import the flame from the clipboard, you should see the base-shape from the "m"-letter of the iflame now:



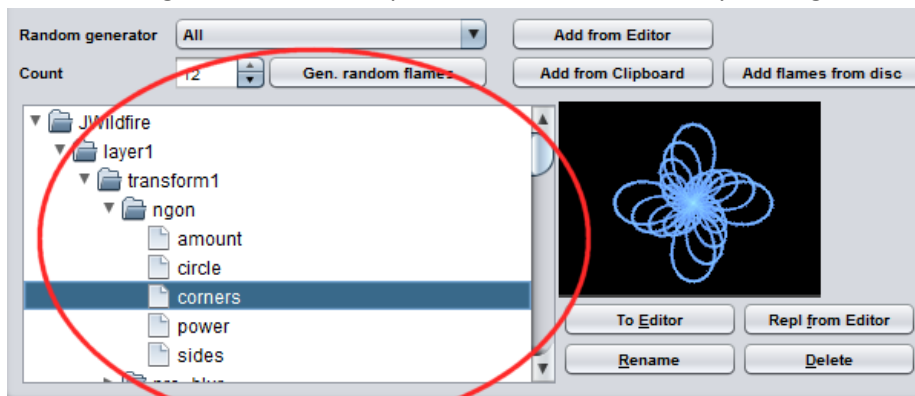
- To get some interesting variation of this shape we can play with the "corners"-parameter of the "ngon"-variation (Please note, that we can not only with parameters of variations, but with any parameter of the flame). It seems, that values in the range -7...7 produce interesting shapes:



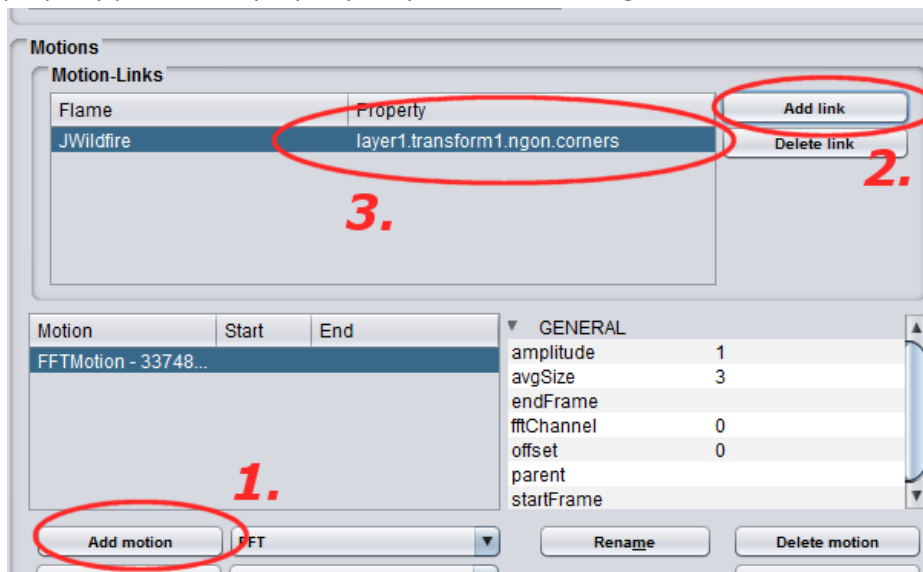
- Okay, but how to tell the iflame to change the parameter "corners" of the "ngon"-variation of the first transform of our base shape? The key are so-called property-path, already used in the Dancing-Flames-module. So let's use this module to generate the needed property path!
- Press the "Dance"-button in the main editor.



- In the Dancing-Flames-module open the node "JWildfire->layer1->ngon->corners"



- Press the "Add motion"-button, then press the "Add link"-button, now you can see the property path of the property: "layer1.transform1.ngon.corners"

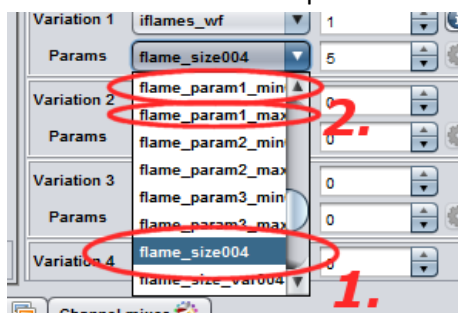


- Return to the main, editor, close the base-shape by pressing at the small "x"-symbol and double-click at the iflame to bring it back to the editor.

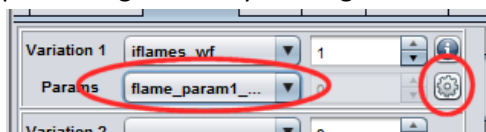


- Enter the range of the parameter field by setting the value of the parameter "flame_param1_min004" to -7.0 and by setting the value of the parameter "flame_param2_max004" to 7.0.

As a hint: to locate those params: locate the param "size004" and scroll backwards.

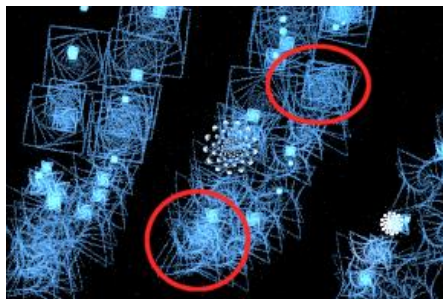
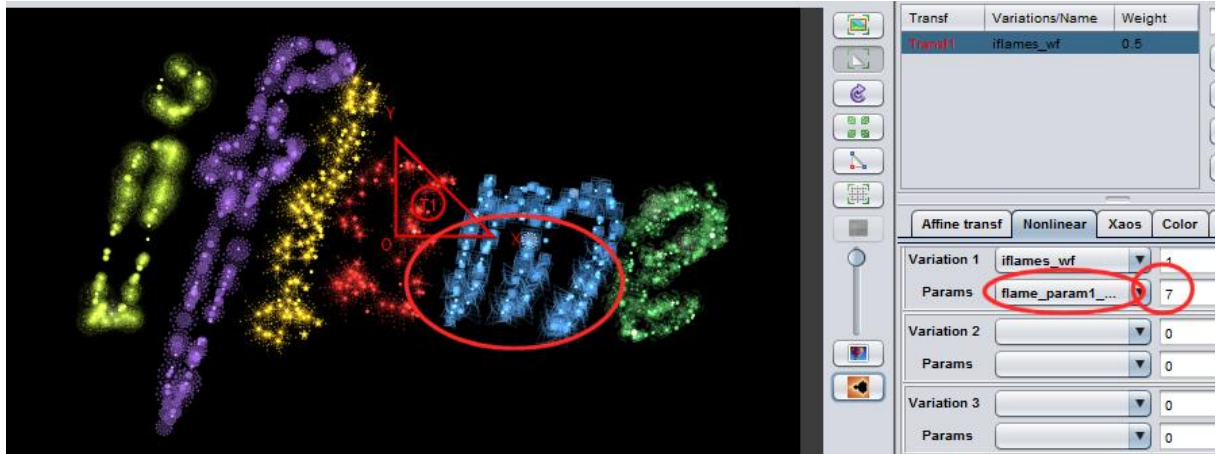


- Choose any image as parameter-map. Choose the parameter "flame_param1_map1" and press the gear-like-symbol right of it.



- Finally: set the property path! Choose the parameter "flame_param10001" and enter the property path you obtained using the Dancing-flames-module: layer1.transform1.ngon.corners

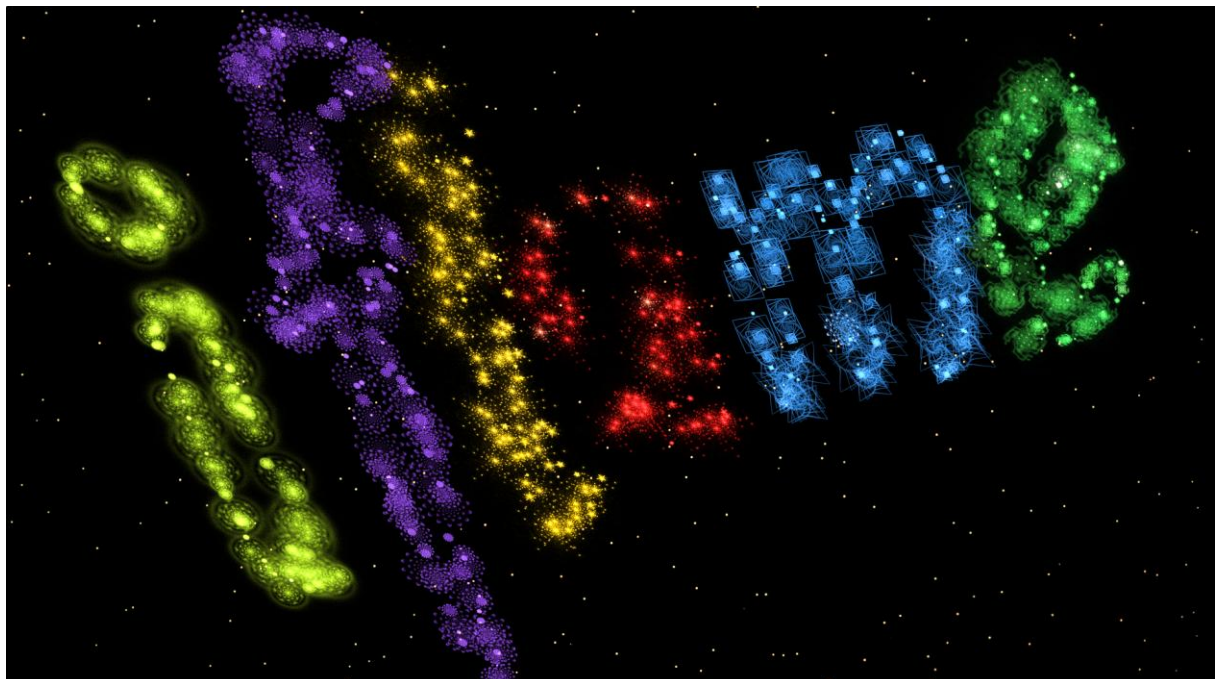
- You now should see some change in the small shapes, the concrete behaviour depends on the image you chose. Just play around.



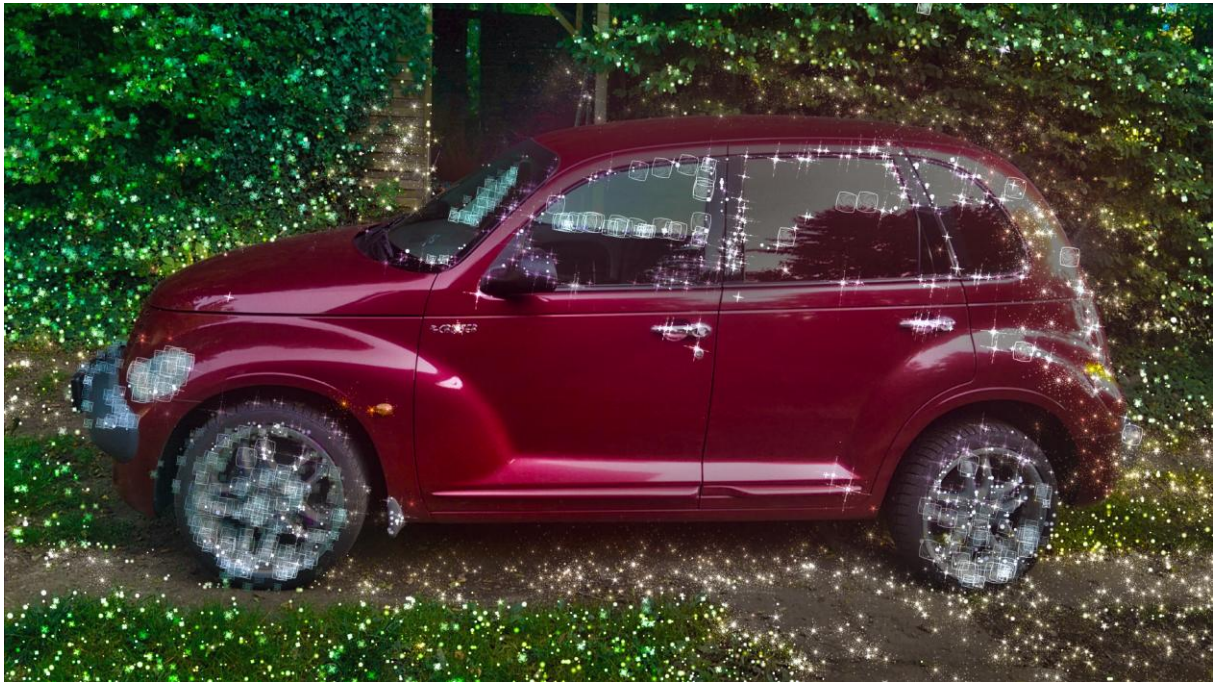
4.9 Apply the "finishing touch"

Now you can give the iflame the "finishing touch" to make it your own. You can treat it like any flame you created before, add some cool DoF/bokeh-effects and adjust the settings at the colors-tab.

I ended with this:



But, again, "The Possibilities are Infinite" :-)



I hope, this tutorial could inspire you and you will have a lot of fun with iflames!