

KPT FRAXFLAME



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Overview

Flame fractals have been around for quite some time, but have never been used in a filter. These exquisite fractals look like real natural phenomena, but unlike anything you've ever seen. They're fractals, but not like those in KPT Frax4D. They are sort of ethereal, like crystal clouds. KPT FraxFlame lets you explore these fractals and render them as images.

Setting up a Flame Fractal

KPT FraxFlame is basically an exploratory filter. It lets you explore the infinite variety of fractals by random generation of fractal patterns.

The setup process is rather straight-forward. First, you select a flame fractal style and then you randomly mutate the pattern until you find one you like. When you've decided on a specific fractal, you can explore your choice further, by repositioning your view or zooming into different areas. After all that's done, you can set rendering options and that's it—you have a flame fractal.

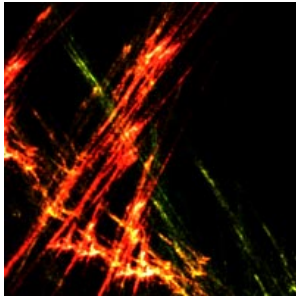
Choosing a Style

The Style palette lists seven different flame fractal styles. These styles are only a very small subset of the types of flame fractals that exist, but they're a good starting point for exploration.

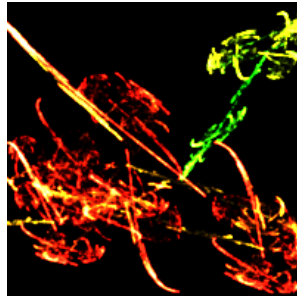


The KPT FraxFlame Style panel.

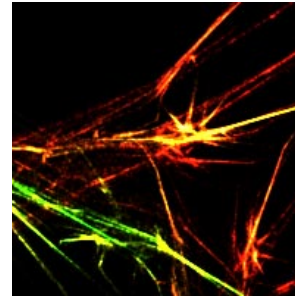
Styles are mutually exclusive, so you can only use one style at a time.



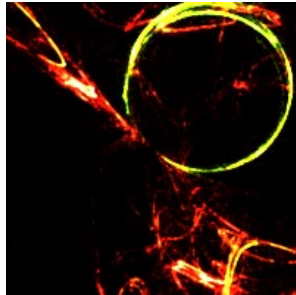
Linear



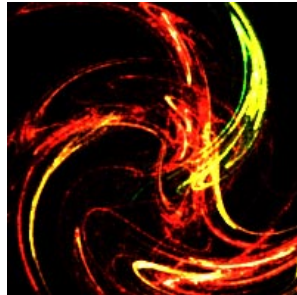
Sinusoidal



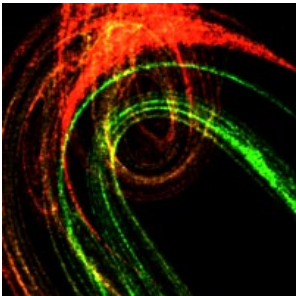
Bent



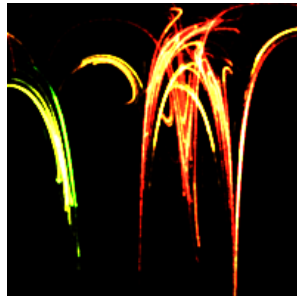
Spherical



Swirl



Horseshoe



Polar

Examples of the different flame styles.

An example of a flame style.

To choose a style:

- ✱ In the Style palette, click the fractal style you want to use.

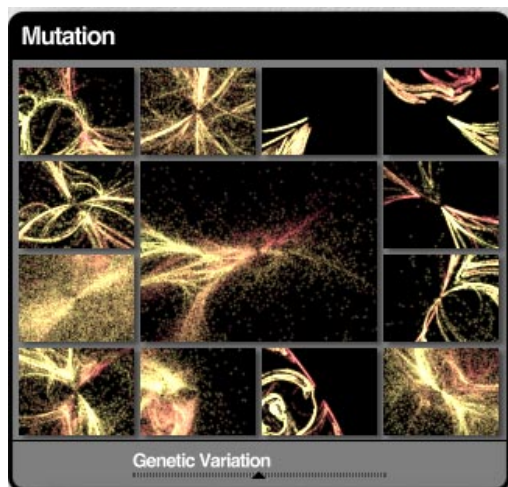
Mutating a Flame

The Mutator lets you randomize a flame fractal within a specific set. So, once you've selected a style, you can use the Mutator to see other fractals within the set.

Flame fractals are generated using complex mathematical equations with a wide number of parameters. These parameters are like genes that go into making the final fractal. You can change the pattern of the fractal through genetic mutation (i.e. mutating parameters).

The preview at the center of the Mutator palette represents the parent fractal and the smaller windows that surround it are derivatives, or cousins, of the parent. Every time you mutate the

parent, you generate different derivatives. The Genetic Mutation slider controls how closely related the new derivatives are to the parent fractal.



The KPT FraxFlame Mutator.

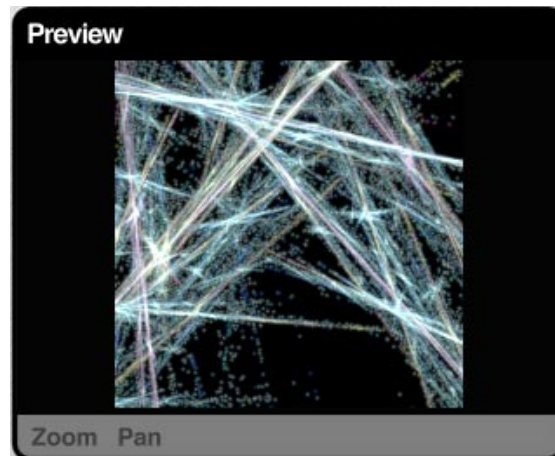
To mutate a fractal:

- 1 Click the preview in the center of the Mutator until you see a flame pattern you like.
- 2 Click the small preview of the pattern you want to explore. Your selection becomes the parent fractal and is displayed in the center of the Mutator.
- 3 Adjust the position of the Genetic Mutation slider.
At high values, the derivatives are more random. At lower settings, the derivatives look more like the parent fractal.

- 4 Click the center preview again to generate derivatives of the selected flame.
- 5 Continue clicking the Mutator and selecting derivatives until you get the look you want.

Viewing your Flame Fractal

Once you generate the flame you want, you can explore it further by changing your view of the fractal. The Pan, Zoom and Reset controls on the Main Preview window let you move to different parts of the fractal and explore its infinite detail



The Main Preview window.

NoTe

If you notice that the preview slows dramatically when you switch your preview to Large, increase the amount of memory allocated to the application.

Repositioning your View

The Pan control lets you move your view of the fractal along the X and Y axes.

To pan your fractal:

- 1 Click the Pan text label.
- 2 Drag inside the Main Preview window or the text label itself.

Click Reset to restore the view to its default position.

Zooming into your Fractal

The Zoom control lets you enlarge an area of your fractal to see more detail. Since the flame fractal is infinitely detailed, you can zoom continuously to see more patterns.

To zoom in/out of your fractal:

- 1 Click the Zoom text label.
- 2 Drag inside the Main Preview window. Drag right to zoom in or left to zoom out. You can also drag on the text label to zoom.

Click Reset to restore the view to its default position.

Coloring your Fractal

Flame fractals are colored using gradients of color. Gradients are drawn from the Gradient palette. Refer to [“Color Gradient Panel” on page 35](#) for more on designing gradients.

Rendering your Fractal

The Render palette lets you adjust the flame image for the final rendering process. Many of these controls work just like the image-enhancing features found in most host applications.



The Rendering panel.

Setting Gamma

The Gamma control lets you adjust the tonal range of your image. At higher values, colors appear more saturated. At lower values, colors appear washed-out.

Setting Intensity

The Intensity slider lets you adjust the intensity of the colors in the flame. Higher values make the flame brighter and more vibrant. Lower values make the flame look faded.

Setting Preset Rendering Options

The six preset rendering options available on the Rendering panel menu are designed to give you the highest quality render without making rendering too slow.

The rendering options are divided into two groups. The Sparse group options are designed to improve the quality of cloudy, disperse or pixelated flame fractals, like Sinusodial fractals.

The Sharp rendering presets are designed to improve the quality of fractals with well-defined elements that are tightly packed, like Linear fractals.

The two groups are mutually exclusive, so you should apply the group that best suits the fractal type you select.

Setting Custom Rendering Options

The Custom render option lets you setup your own rendering settings using Sample Density, Oversampling and Filter Radius values.



Adjust these settings in small increments. Some controls can greatly increase rendering time. Large adjustments may result in an extremely long wait when you apply the fractal.

Setting Sample Density

Sample Density controls the complexity of the fractal. At higher settings, you'll be able to see more detail in the fractal. However, more detail requires more rendering time. Use this setting carefully or you may end up waiting a long time for an image.

Setting Oversampling

Oversampling sets how many times a fractal is sampled to generate each pixel in your image. High values of this setting can greatly increase the quality of the final render. However, your fractal takes much longer to render.

Setting Filter Radius

The Filter Radius control blurs the edges of the fibers in a flame fractal. The higher the radius, the fuzzier the edges appear.