



KPT Turbulence

KPT Turbulence is a real-time, 2D wave distortion engine. It displays an image in a special preview window, as it creates a “wave pool” simulation around it. Simply click on your image and KPT Turbulence produces ripples from that location. Click and drag through your image to create a wake. You can watch, pause, or step-through the action to locate the look you’re after. Finally, apply a freeze-action snapshot of the image distortion, or save snip-its of the motion as a movie or sequence of images.

This chapter provides specific information about working with KPT Turbulence, including:

- [Working with KPT Turbulence](#)
- [Creating, Viewing, and Applying KPT Turbulence Effects](#)
- [Controlling the Turbulence](#)
- [Adding a Gradient](#)
- [Making Movies](#)
- [Using Keyboard Commands](#)

Refer to [KPT 6 Basics](#) for more information about using standard features of the KPT user interface.

To launch KPT Turbulence:

- 1 Open the image you want to modify in the host application.

If the image includes multiple layers, select the layer on which you want to render the turbulence.

If you want to apply the effect to a selected area, make that selection now. Otherwise, make sure that no selections are active in the host application.

- 2 Select **Filter menu > KPT6 > KPT Turbulence**.

KPT Turbulence launches and occupies the entire screen.

Working with KPT Turbulence

When you launch KPT Turbulence, the image appears in the Preview window. As you create a turbulence, the image in the Preview window updates to display the changes.



The Preview window.

Setting Sliders

Each KPT Turbulence panel includes standard KPT sliders. Sliders are the mechanism for adjusting a panel's settings. When you move a slider, the panel expands to give you additional controls.

Refer to [“Setting Sliders”](#) for more information about working with sliders.

Using the Presets Library

KPT Turbulence includes a library of preset settings. You can also add settings of your own creation to the library for future use.

Refer to [“Working with the Presets Library”](#) for details about using the Presets Library.

Creating, Viewing, and Applying KPT Turbulence Effects

KPT Turbulence creates a “wave pool” simulation around your image. To start the turbulence, you need only “touch” the pool. Once turbulence is set in motion, you can watch, pause, or step-through the ripples and waves, as you search for the look you're after. As in real-life, turbulence moves forward, not backward. You cannot retrace, rewind, or step back through the turbulence effect.



Start the KPT Turbulence “wave pool” in motion with a touch or drag of the cursor. Stop, continue, pause, or step-through motion, to find the look you want.

Note

Preview window size can affect performance. If turbulence seems jerky or slow, reduce the size of the Preview window.

To create ripples:

- Click on your image in the Preview window. KPT Turbulence produces ripples from that location.

To create waves:

- Click and drag through your image to create a wake.

To stop (freeze) motion:

- Click the Stop button to stop motion in the wave pool.



Click the Stop button to stop motion in the wave pool.

To apply the current view to the underlying image:

- Click the check icon on the KPT Turbulence workspace to apply the filter effect and return to the host application.

To continue motion:

- Click the Continue button to resume motion in the wave pool.



Click the Continue button to resume motion in the wave pool.

To pause motion:

- Click the Pause button to resume motion in the wave pool.



Click the Pause button to pause motion in the wave pool.

To step-through motion:

- Click the Step Forward button repeatedly, to step-through motion in the wave pool.

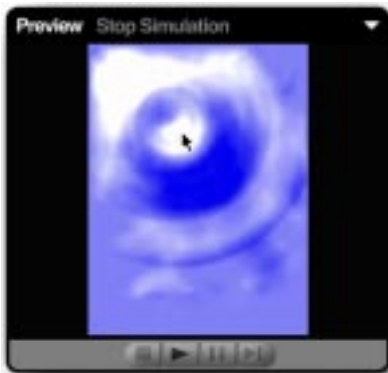


Click the Step Forward button to step-through motion in the wave pool.

Controlling the Turbulence

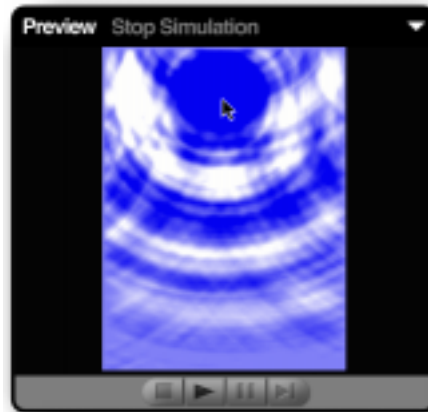
As waves distort the underlying image, they propagate over time and create fluid motion. To control the nature of that motion, you can:

- Adjust Brush Size - what size brush or tool to use when touching or dragging through the pool. You can select a tool as small as a needle or as large as a stick. Brush size affects the resulting ripple and wave size.



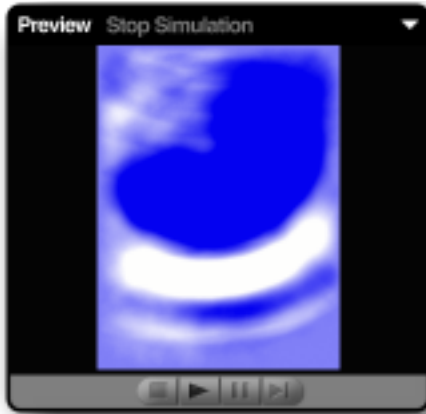
A large brush size causes large ripples in the pool.

- Adjust Brush Flow - how much energy is added into the wave pool by the brush. Brush flow affects how quickly ripples and waves dissipate.



Increase Brush Flow to increase the force at which the pool liquid is touched. Brush Flow affects how long it takes for ripples and waves to dissipate.

- Set Damping - how long it takes until the image is once again still. Like adjusting the consistency of the pool liquid, you can set it high to create thin liquid (like water) or low to create thick liquid (like gel). Ripples and waves in thin liquid bounce and take a long time to settle. In thick liquid, waves and ripples are quick and take a short time to settle.



Adjust Damping to alter the viscosity of pool liquid, which affects how long it takes the liquid to become still again.

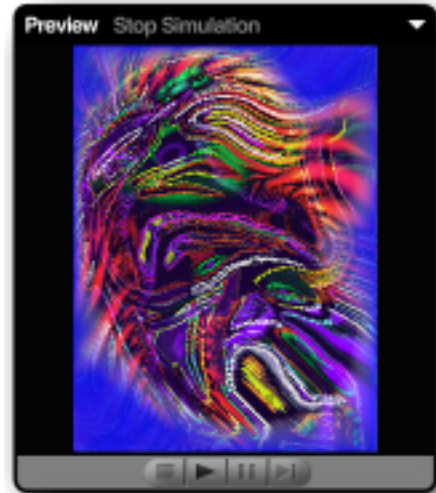
- Set Distortion - how much the image is distorted by motion in the pool. Best used with an underlying image, imagine that your image is at the bottom of a pool and you're looking at your image through the liquid. Distortion controls the amount of refraction and displacement.

To set brush size:

- Adjust the position of the Brush Size slider in the Parameters panel or click the number below and type a value.

To set brush flow:

- Adjust the position of the Brush Flow slider in the Parameters panel or click the number below and type a value.



A high Distortion setting causes maximum distortion of the image, like you're looking at it through a deep, rather than a shallow, pool.

To set damping:

- Adjust the position of the Damping slider in the Parameters panel or click the number below and type a value.

To set distortion:

- Adjust the position of the Distortion slider in the Parameters panel or click the number below and type a value.

Adding a Gradient

Gradients can be used to color the pool, waves, and ripples that are generated by KPT Turbulence. You can control how ripple and wave depths are indexed into the gradient, as well as gradient transparency. This lets you create very interesting effects.

Using the Gradient Panel

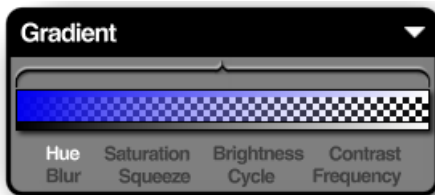
With the Gradient panel, you can create blends of up to 512 colors, including 256 levels of opacity. The current gradient is displayed in the bar at the center of the panel. As you choose different colors, the bar updates to show the new gradient.

You can also load gradient presets to use in the panel, or you can save the contents of the panel as a new preset.

To use a gradient:

- Click the Blend with Gradient option in the Parameters panel.

The Gradient panel is displayed.



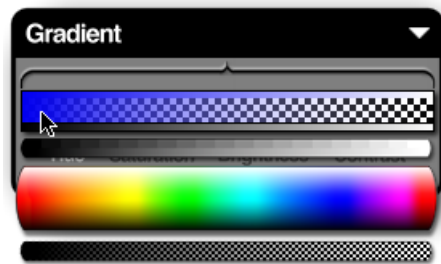
The Gradient panel

To increase the size of the panel:

- Click the triangle icon at the top of the panel and choose Large Gradient Bar from the menu.

To expand the panel:

- Click and drag inside the Gradient panel to expand it.



Click and drag inside the Gradient panel to expand it.

When the Gradient panel is expanded, you can select grayscale, colors, and transparency settings. You can also edit the gradient itself.

Setting the Gradient Level

Imagine that you're looking at the KPT Turbulence wave pool from the side. Some ripples or waves go deep, others go shallow, acting something like a "height map".

KPT Turbulence indexes a gradient by using this "height map", choosing colors based upon the height of each wave it simulates.

Depending upon a wave's height, the gradient is indexed between the high (right) and low (left) ends of the gradient you've selected.

You can control how KPT Turbulence indexes the gradient on an average, by changing the Gradient Level slider.

To set the gradient level:

- Adjust the position of the Gradient Level slider in the Parameters panel or click the number below and type a value.

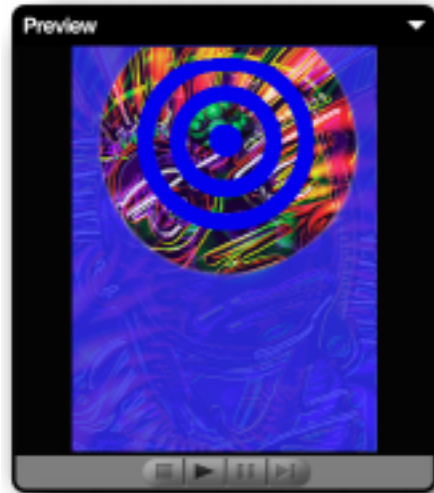
Gradient level determines how far from center waves travel. When Gradient Level is set high, the full range of the gradient is used. When Gradient Level is set low, only the center part of the gradient is used. More is used as waves become more violent.

In every case, when waves are gone or when they are small, the center of the gradient is used.

Setting Gradient Transparency

You can determine how much or how little of your image shows through the gradient. A gradient is an image, separate from the underlying image. A gradient can be solid or it can contain transparency information. KPT Turbulence uses gradient transparency information to know how much of the underlying image to display.

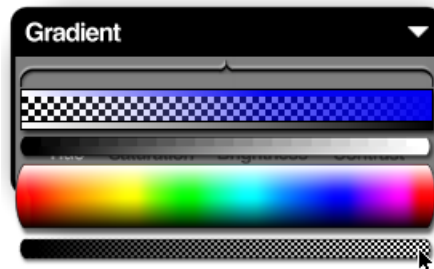
Once you've set transparency for a gradient, you can preserve that setting, even while selecting alternate colors. Refer to [“To maintain transparency settings:”](#) for more about how to preserve transparency settings.



The underlying image shows through this gradient, because the gradient is set to a high level of transparency.

To set gradient transparency:

- Click inside the bottom (checkerboard) bar of the Gradient panel to set a level of transparency for the gradient.



Click in the bottom checkerboard bar of the Gradient panel to set a level of transparency for the gradient.

Click towards the high (right) end of the gradient transparency bar for high transparency. Your underlying image shows through the gradient.

Click towards the low (left) end of the gradient transparency bar for low transparency. Little or none of your image shows through the gradient.

Feathering a Gradient

When the edges of a gradient are too sharp for your purposes, you can gently soften them.

To soften gradient edges:

- Click the triangle icon at the top of the panel and choose Feathering from the menu.
KPT Turbulence calculates the gradient with a 10% ease on either side, creating a slightly fuzzy or softened effect.

Choosing Colors for a Gradient

The bar that appears at the top of the panel, called the Gradient bar, is where you choose colors and edit your gradient.

When selecting a new color for your gradient, remember that you're not just selecting a color for the gradient, but also its position within the blend.

If you add a color on the low (left) side of the Gradient bar, you're setting the color for the beginning of your gradient. If you press on the high (right) side of the bar, you are setting the color for the end of your gradient.

To select a color:

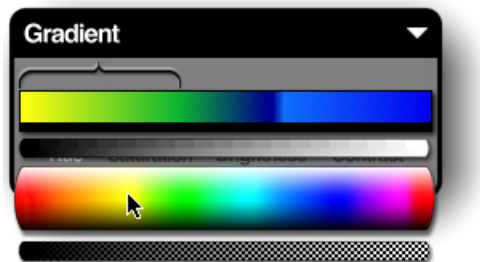
- Click a point on the Gradient bar and drag the cursor over the color you want.
In addition to the colors in the Color Picker, you can also drag the cursor over any color visible on your monitor to select that as your color.

To maintain transparency settings:

- Click the triangle icon at the top of the panel and choose Preserve Alpha from the menu.
- Click a point on the Gradient bar and drag the cursor over the color you want.

Editing a Gradient

The Gradient bracket, located above the Gradient bar, can be used to isolate an area of your gradient for editing. Any changes you make to a gradient only affect the area within the bracket. You can use this feature to create more complex gradients. For example, you can create several smaller gradients within a gradient.



The Gradient Bracket.

By default, the bracket encompasses the entire gradient, you can resize it and move it to work with a smaller portion of your gradient.

To resize the bracket:

- Click and drag either end of the bracket.
If you drag one end of the bracket past the other end, it pivots, leaving one end exactly where it began.

To reset the bracket:

- Double-click on the center of the bracket.

To reposition the bracket:

- Click the center of the bracket and drag to the left or right.

To cut and paste parts of a gradient:

- 1 Make sure the part of the gradient you want to copy is within the Gradient bracket.
- 2 Click the triangle icon at the top of the panel and choose Copy from the menu.
- 3 Reposition the bracket and choose Paste from the menu.

To flip a gradient:

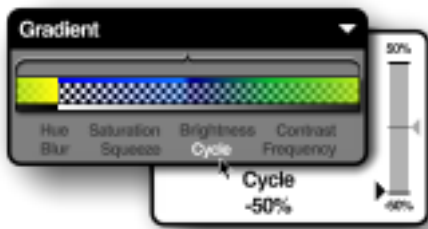
- Choose Flip from the Gradient panel options menu. KPT flips everything within the Gradient bracket.

Applying Gradient Modifiers

There are eight “tweaking” controls you can use to modify the colors and other parameters of your gradient or a portion of your gradient.

- **Hue** - Rotates the hues for your gradient. Each hue occupies a unique spot on a virtual color wheel. As you rotate hues, all of the colors within your gradient rotate, allowing you to cycle through all of the possible colors in the spectrum, but maintaining each color’s relative distance from every other color.
- **Saturation** - Modifies the saturation (or intensity) of the colors within your gradient.
- **Brightness** - Determines the brightness of colors (i.e. how much white is mixed with each color). Press on this control and drag to the right to increase brightness—drag left to decrease brightness.
- **Contrast** - Works by comparing the color values of individual pixels with the color values of neighboring pixels. Increasing the contrast exaggerates the differences between colors. Decreasing the contrast homogenizes your colors. You can actually reduce contrast to the point where your entire gradient is a uniform gray.
- **Blur** - Increase or decreases the blurriness of your gradient. Increasing the blurriness of a gradient effectively smudges the edges of colors.

- **Squeeze** - Squeezes your gradient to one side or the other. The “squeeze” always starts at the center of the Gradient bracket and moves to either end. If you want to squeeze your gradient starting from somewhere other than the center, do it manually. Hold down Option/Alt and drag within the Gradient bar itself.
- **Cycle** - Reposition the entire gradient, so that colors appear in different locations.



Colors repositioned using the Cycle control.

- **Frequency** - Sets how many iterations of the gradient appear within the gradient itself.

To use a modifier:

- Drag over the text label for the control you want to use.
 Drag to the right to increase a modifier's effect, or to the left to decrease it.
 As you drag, the expanded slider appears to help you set modifier values precisely.

Making Movies

Making movies of your KPT Turbulence distortions is easy. This section contains all of the information you'll need to create interesting movies.

A movie is created by capturing a specified time duration of motion. KPT Turbulence shows you a preview of the movie at the time it is saved.

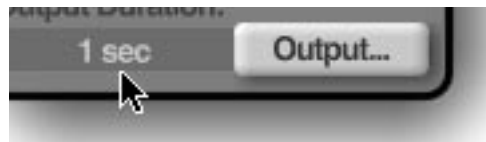
Note

Pause motion in the Preview window with the motion control buttons. When you save a movie, motion begins at the point where you pausing it and ends after the specified period of time.

You can save movies on the Macintosh as QuickTime and Sequenced PICT format files. On Windows, you can save movies as AVI, Sequenced BMP, or QuickTime versions 3 or 4 format files. Once you've saved a movie, it can be used in other multi-media applications.

To set a time duration for a movie:

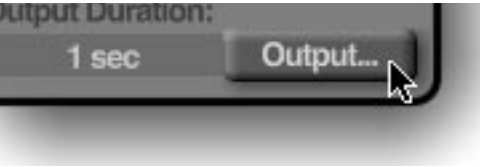
- Click the time display under Output Duration in the Parameters panel and enter a new duration length.



Set movie length first.

To save a movie:

- 1 Click the Output button. The Make Movie dialog appears.



Click Output to make the movie.

- 2 If your image includes a transparency, click the Transparency Options menu triangle in the top right corner of the Make Movie dialog. Then choose one of the following options:
- Current Preview Compositing saves the transparency with the “Preview Against” value selected under Preview Options.
 - Bluescreen Compositing displays the transparency as a blue background, and can be composited in another program.
- 3 Choose an Output Format from the popup menu.
- PICT Sequence saves a series of independent images. QuickTime Movie saves a QuickTime Movie.
- 4 Click the Settings popup to display compression options for your movie.
- Set the desired Compression options. The options available depend on the Compressor you select. Refer to your Macintosh or Windows system documentation for more on these compressors.

- 5 Click the arrow icon next to the File Location text label.
- The Save As dialog appears.
- 6 Choose a location and filename for your movie or PICT files and click Save.

Note

When saving PICT files, consider saving to a separate directory, since this option creates many independent image files.

- 7 Use the Size slider to set the dimensions of your movie. Drag right for a larger screen resolution, or left for a smaller screen resolution.
- 8 Click the checkmark icon to create the movie or PICT files.

Using Keyboard Commands

Keyboard commands are especially useful for operations that you perform frequently. This section lists KPT Turbulence-specific commands. Refer to [“Using Keyboard Commands”](#) for information about general KPT keyboard commands.

What you press:	The results you get:
Spacebar	Toggle between pausing motion and continuing motion
Command/Ctrl+M	Output a movie file