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Motion Paths

Reference

Editor:

3D Viewport, Properties

Mode:

Object Mode

Panel:

Properties ▸ Object Properties ▸ Motion Paths

Reference

Editor:

3D Viewport, Properties

Mode:

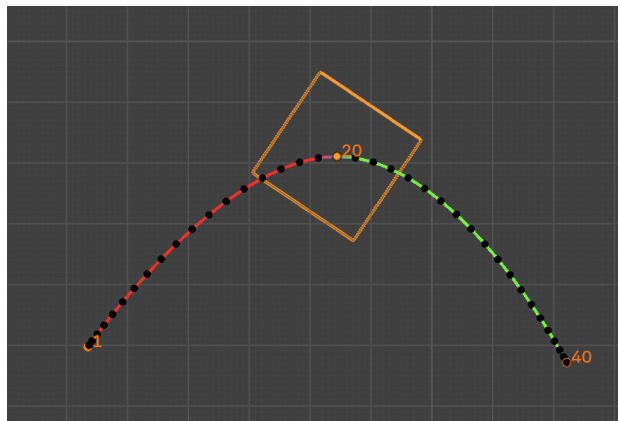
Pose Mode

Panel:

Properties ▸ Armature ▸ Motion Paths

Menu:

Pose ▸ Motion Paths



An animated cube with its motion path displayed.

The Motion Paths tool allows you to visualize the motion of points as paths over a series of frames. These points can be object origins and bone joints.

To create or remove motion paths, it is necessary to first select the bones. Then:

1. To show the paths (or update them, if needed), click on the *Calculate Path* button.
2. To hide the paths, click on the *Clear Paths* button.

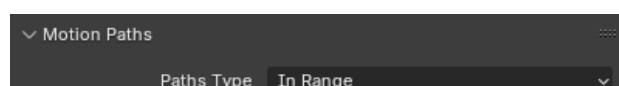
Note

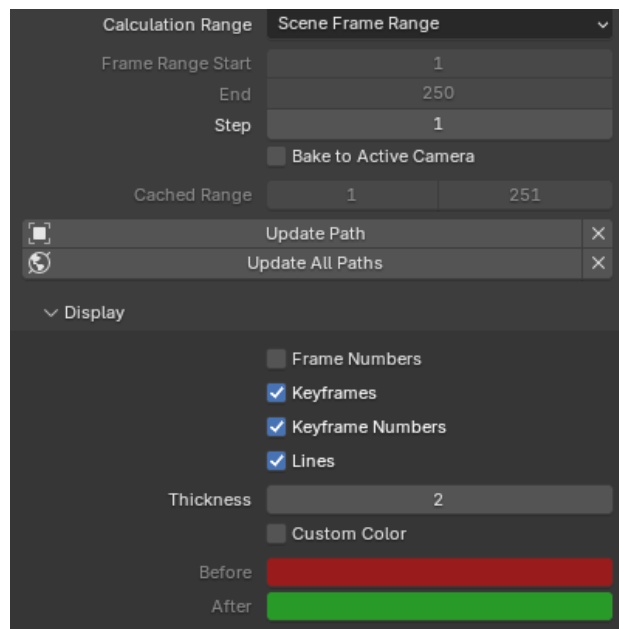
Remember that only selected bones and their paths are affected by these actions!

The paths are shown in red for the section in the past and green for the section in the future. These colors follow the user preference options “Before Current Frame” and “After Current Frame”, which can be found in the 3D Viewport section. Each frame is displayed by a small dot on the paths.

The paths are automatically updated when you edit your poses/keyframes, and they are also active during animation playback. Playing the animation affects the paths only when using the *Around Frame* type.

Options





The Motion Paths panel in the Armature tab.

Paths Type

Type of range to show for Motion Paths.

Around Frame:

Display paths of points within a fixed number of frames around the current frame. When you enable this button, you get paths for a given number of frames before and after the current one

In Range:

Display paths of points within specified range.

Calculation Range

The range of the motion path. Only active when *Paths Type* is set to *In Range*. Changing this option only takes effect when updating the path, via the *Update Path* or *Update All Paths* buttons.

All Keys:

Generate a motion path ranging from the first keyframe to the last. Only the keys of the active object / bone are considered.

Selected Keys:

Same as *All Keys* except that it ranges from the first to the last *selected* keyframe.

Scene Frame Range:

Use the start & end frames of the scene, or the [preview range](#) if active.

Manual Range:

Manually set the start and end frame.

Frame Range Start, End

Starting and Ending frame of range of paths to display/calculate (not for the *Around Frame* type).

Although the start and end frame are always editable, updating the motion path will change these according to the *Calculation Range* setting. To ensure your chosen frame range is maintained, choose *Manual Range* there.

Frame Range Before, After

Number of frames to show before and after the current frame (only for the *Around Frame* type).

Step

Allows displaying one point for every n frames on the path. Mostly useful when you enable the frame number display (see below), to avoid clutter the 3D Viewport.

Bake to Active Camera

When enabled the motion path is calculated in screen space for the active scene camera. Note that the resulting motion path will only be useful for that single camera. Switching cameras using markers is not supported. It will only bake to the camera that is active when the bake was started.

Cache/Bone Cache From, To

These are the start/end frames of the range in which motion paths are shown. You cannot modify this range without deleting the motion path first.

Calculate

If no paths have been calculated, Calculate Paths will create a new motion path in cache based on the options specified in the pop-up menu or the [Adjust Last Operation](#) panel. Note, if the current context is an Armature calculating the objects motion paths, and not the bones, this operator will calculate the motion paths for all the bones within the armature as well.

Start, End

These are the start/end frames of the range in which motion paths are shown. The start frame is *inclusive*, so if you set *Start* to 1, you will really see the frame 1 as starting point of the paths...

Bake Location

Which point on the bones is used when calculating paths. Only available for bones while in Pose Mode.

Heads:

Calculates the path position of the bone's heads.

Tails:

Calculates the path position of the bone's heads.

Update Paths

In the case a path has already been calculated, this operator will update the path shape to the current animation. To change the frame range of the calculated path, you need to delete the path and calculate it again.

✕ (Clear Paths)

Clears paths on all objects/bones or just the selected ones when holding **Shift**.

Update All Paths

Recalculates the motion paths for all visible objects and poses.

Display

Frame Numbers

When enabled, a small number appears next to each frame dot on the path, which is of course the number of the corresponding frame.

Keyframes

When enabled, big yellow square dots are displayed on motion paths, showing the keyframes of their bones (i.e. only the paths of keyed bones at given frame get a yellow dot at this frame).

+ Non-Grouped Keyframes

For bone motion paths, it searches the whole Action for keyframes instead of in groups with matching name only (this is slower).

Keyframe Numbers

When enabled, you will see the numbers of the displayed keyframes, so this option is obviously only valid when *Show Keys* is enabled.

Lines

Toggles whether the lines between the points are shown.

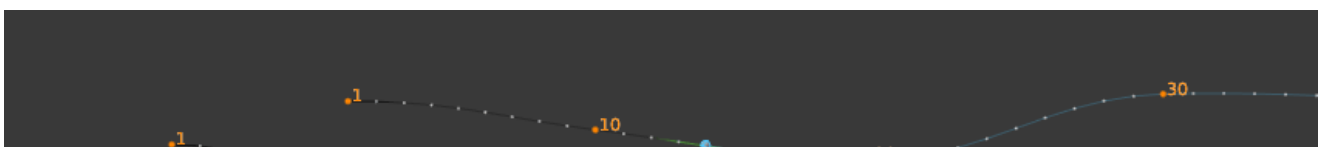
Thickness

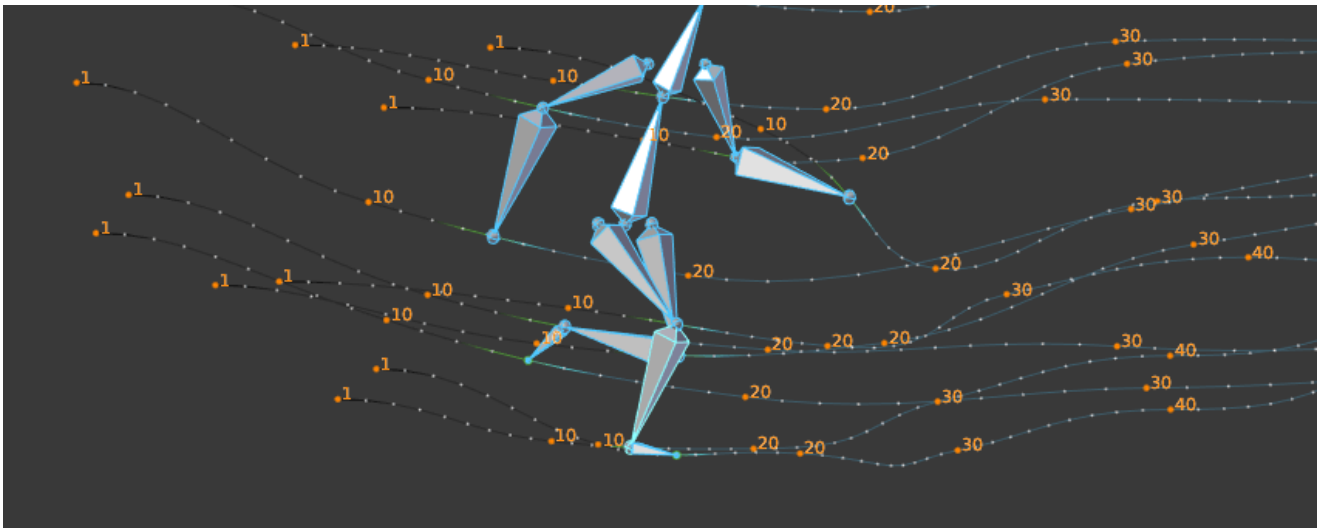
Line thickness for motion path.

Custom Color

Use custom color for this motion path. The custom color can be modified for time before and after the current frame.

Example





An example of a motion path of an armature.

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