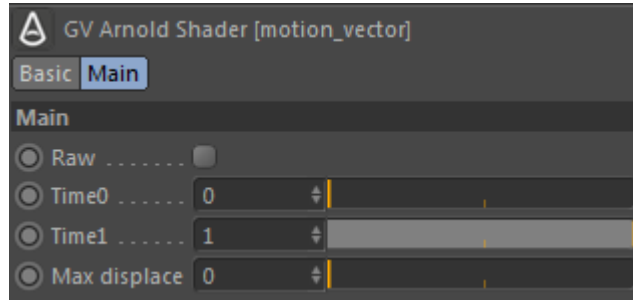
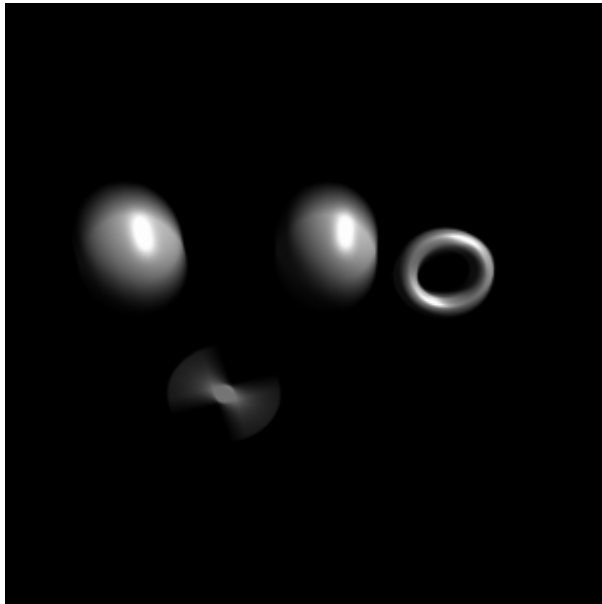


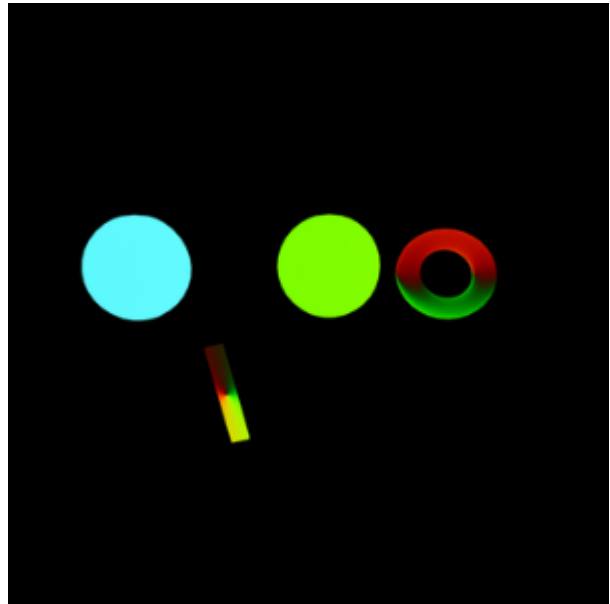
# Motion Vector



This shader will encode a vector representing the motion of the object in the Red and Green components. The following two images illustrate the effect. The first image shows the original scene with motion blur rendered normally. The second shows the false-color effect of the motion vector.

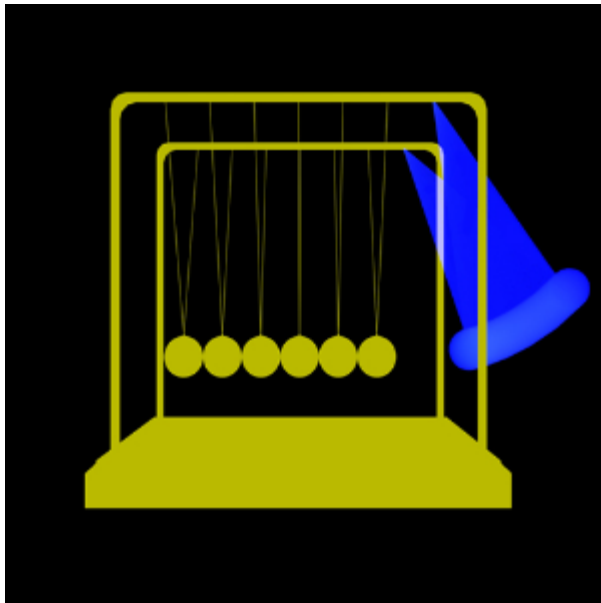


Original scene with 3D motion blur.

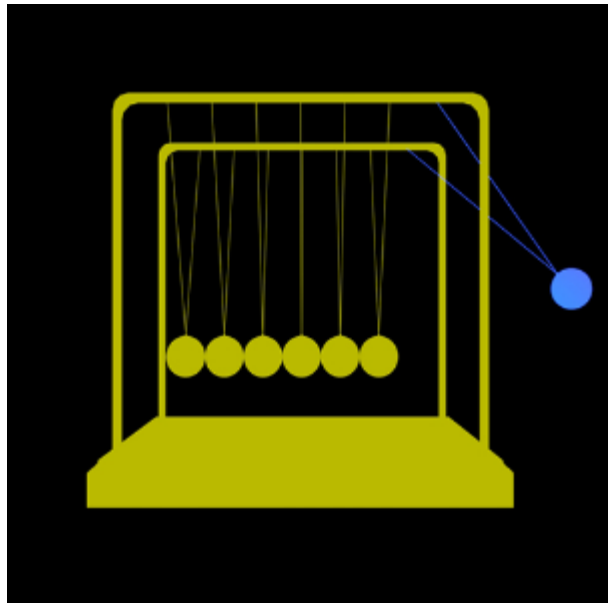


Using the motion\_vector shader. The left sphere has a max\_displace of 0 (hence blue). Other objects have max\_displace of 1.


**i** To use this shader correctly, you must enable *instantaneous\_shutter For Motion Vectors* (Motion Blur settings).





Instantaneous Shutter For Motion Vectors: Disabled (incorrect)



Instantaneous Shutter For Motion Vectors: Enabled (correct)

 A tutorial that shows how to use the `motion_vector` shader can be found [here](#).

  A video tutorial about how to create a custom motion vector AOV can be found [here](#).

### Raw

The vector won't be normalized.

### Time 0

Sample time for shutter start.

### Time 1

Sample time for shutter end.

### Max Displace

When greater than 0, this is the maximum amount of screen-space motion. The motion vector encoded in the RG components is then normalized to this value. This is better when writing to 8 or 16-bit formats like JPEG, TIFF, etc. On the other hand, when this value is less than or equal to zero, magnitude encoding is used instead: RG holds the unit direction vector, and B holds the magnitude. This is better when writing to floating-point formats (EXR etc.).