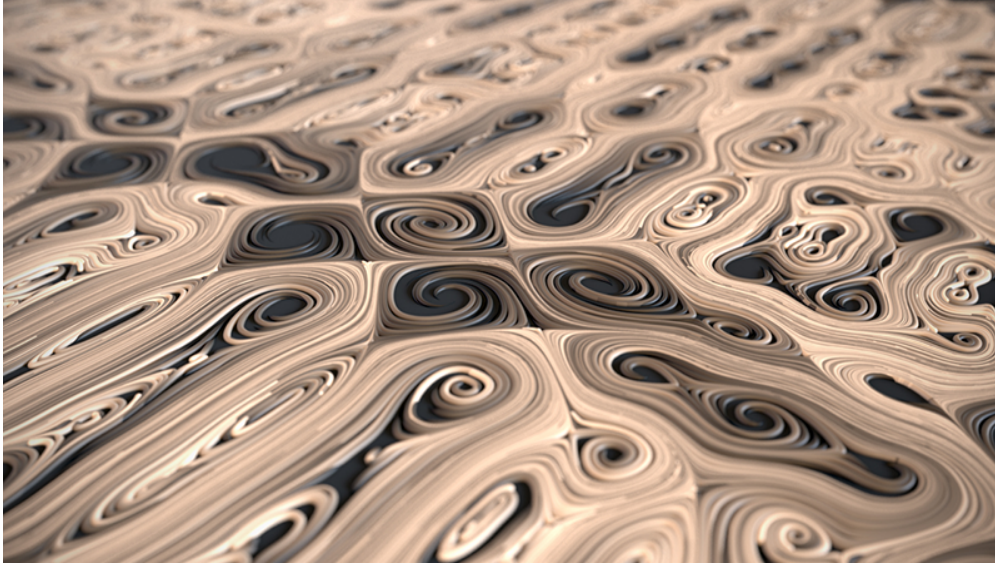
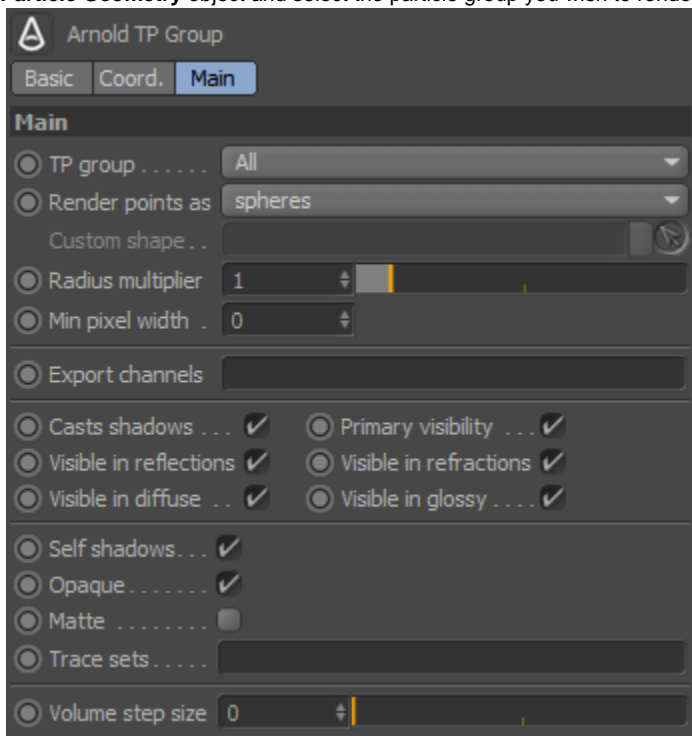


# Thinking Particles



Thinking Particles rendered as hair splines using a Tracer object

You can render **Thinking Particles** with C4DtoA. However, you must first create an **Arnold TP Group** (*Plugins > C4DtoA > Arnold TP Group*) or a **Particle Geometry** object and select the particle group you wish to render.

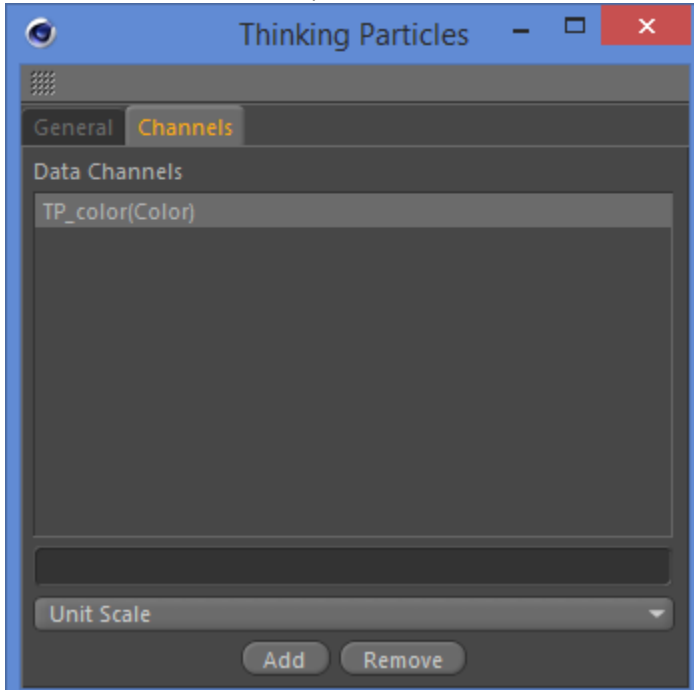


## Export channels

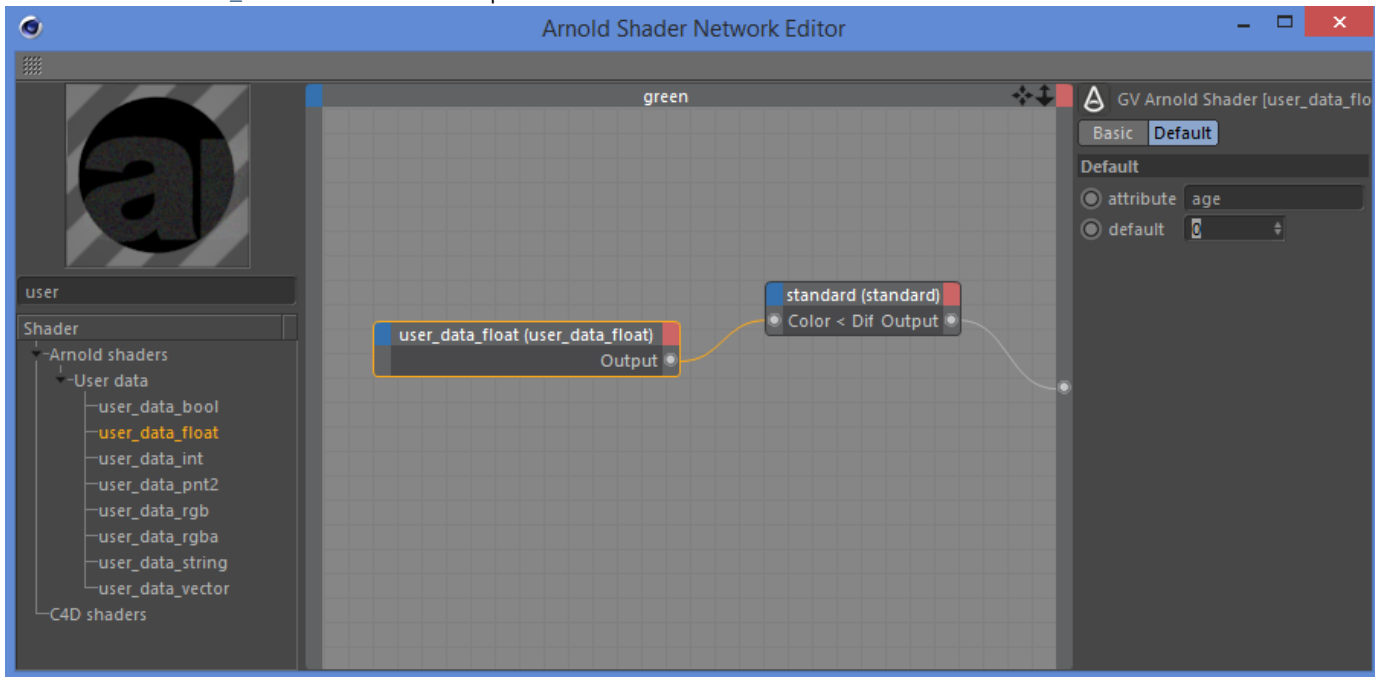
You can export channels of Thinking Particles as user parameters with this field. Define channel names separated with spaces. The following built-in channels are available:

- velocity (vector)
- age (float)
- mass (float)
- color (RGB)

You can also define any custom TP channels. To see the available custom channels click on **Simulate > Thinking Particles > Thinking Particles Settings...** and select the **Channels** tab. Channel name must be set without the type, so if you have a channel listed *TP\_color(Color)* you have to set *TP\_color* to the export field.

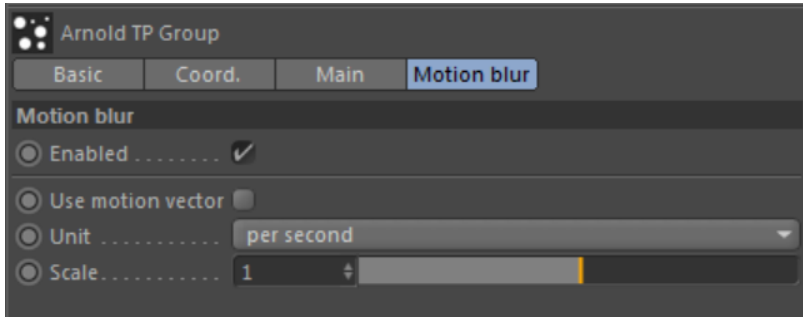


You can then use a `user_data` shader to read the exported channel. Use the channel name in the **attribute** field.



## Motion blur

The **Motion blur** tab offers settings to use the velocity channel calculating the motion blur effect. It can be useful if the particles are not interpolated in sub-frame, e.g. they are loaded from an *Alembic* file.



You can enable/disable the vector motion blur, define the unit of the velocity channel (*per second* or *per frame*) and scale the motion blur effect (multiplier of the velocity values). The Thinking Particle group must have a velocity channel (named **Velocity**) otherwise the vector motion blur has no effect.