

This project shows how to link After Effects 3D coordinates to Particle World 3D coordinates using expressions.

First we've set up three solids to act as a "rotating hose" and we add a Null layer, "Center", that will control the Y-rotation for all elements in the scene, and we link the three solids to it. Add another Null layer, "PW Producer", that will control the position of the PW producer by the expressions and link that too to the "Center" layer. Then we change the Anchor Point X- position for the "PW Producer" to match the end of the "hose" and we animate the Y rotation for the "Center" Null layer.

Now we add a Comp camera and a new solid to which we apply Particle World to set up the particle stream. Then we add the three expressions to link the "PW Producer" X, Y, Z positions to Particle Worlds Producer-X, Y and Z positions. Finally we set the camera position.

Here are the three expressions for the Particle World producer:

**Position-X:**

```
dp = thisComp.layer("PW Producer").toWorld(thisComp.layer("PWProducer").position,time);  
dp[0] / thisComp.width - 0.5;
```

**Position-Y:**

```
dp = thisComp.layer("PW Producer").toWorld(thisComp.layer("PW Producer").position,time);  
dp[1] / thisComp.width - 0.5 * thisComp.height / thisComp.width;
```

**Position-Z:**

```
dp = thisComp.layer("PW Producer").toWorld(thisComp.layer("PW Producer").position,time);  
dp[2] / thisComp.width;
```