

Simple Collective Variables

```
def position_x(snapshot):  
    return snapshot.xyz[0][0]  
  
cv_position_x = paths.CoordinateFunctionCV("x", position_x)
```

That's pretty simple.

What if we want to re-use one function for multiple CVs?

Simple Collective Variables

```
def circle2D(snapshot, center):  
    import math  
    x = snapshot.xyz[0][0]  
    y = snapshot.xyz[0][1]  
    return math.sqrt((x - center[0])**2 + (y - center[1])**2)  
  
cv_A = paths.CoordinateFunctionCV("cv_A", circle2D, center=[-0.5, -0.5])  
cv_B = paths.CoordinateFunctionCV("cv_B", circle2D, center=[0.5, -0.5])  
cv_C = paths.CoordinateFunctionCV("cv_C", circle2D, center=[0.0, 0.5])
```

Other packages have functions for typical analysis.

Why reinvent the wheel?