

Coordinate System

$$(r, \phi)$$

Metric Tensor

$$g = \begin{pmatrix} 1 & 0 \\ 0 & r^2 \end{pmatrix}$$

Geodesic Equations

$$\ddot{r} - r\dot{\phi}^2 = 0$$

$$\ddot{\phi} + \frac{2}{r}\dot{r}\dot{\phi} = 0$$

Christoffel Symbols (non-zero)

$$\Gamma_{\phi\phi}^r = -r$$

$$\Gamma_{r\phi}^{\phi} = \frac{1}{r}$$

$$\Gamma_{\phi r}^{\phi} = \frac{1}{r}$$

Riemann Curvature Tensor (non-zero components)

none

Ricci Tensor (non-zero components)

none

Ricci Scalar

$$R = 0$$

Einstein Tensor (non-zero components)

none