

axially symmetric photon in the y-z-axis:

$$x^\mu$$

$$g_{\mu\nu}$$

$$\sqrt{}=\sqrt{-\det(g_{\mu\nu})}$$

$$\sqrt{}=i.$$

$$g^{\mu\nu}$$

$$\frac{\Gamma^\sigma_{\mu\nu}}{R_{\mu\nu}}$$

$$R^a_{b}$$

$$R$$

$$R=0.$$

$$G^{\mu}{}_{\nu}$$

$$G$$

$$G=0.$$

$$G^{\mu}{}_{\nu;\mu}=0$$

$$g^{\mu\nu}\,\Gamma^\lambda_{\mu\nu}=0?$$