Kerr-Newman geometry in Boyer-Lindquist Coordinates:

$\boxed{x^\mu}$

$x^0 = t.$
$x^1 = r.$
$x^2 = \theta.$
$x^3 = \phi.$

$\boxed{g_{\mu\nu}}$

$$g_{00} = \frac{a^2 + r^2 + q^2 - a^2\sin(\theta)^2 - 2mr}{\cos(\theta)^2 a^2 + r^2}.$$
$g_{01} = 0.$
$g_{02} = 0.$
$$g_{03} = \frac{2ma\sin(\theta)^2 r - aq^2\sin(\theta)^2}{\cos(\theta)^2 a^2 + r^2}.$$
$g_{10} = 0.$
$$g_{11} = -\frac{\cos(\theta)^2 a^2 + r^2}{a^2 + r^2 + q^2 - 2mr}.$$
$g_{12} = 0.$
$g_{13} = 0.$
$g_{20} = 0.$
$g_{21} = 0.$
$g_{22} = -\cos(\theta)^2 a^2 - r^2.$
$g_{23} = 0.$
$$g_{30} = \frac{2ma\sin(\theta)^2 r - aq^2\sin(\theta)^2}{\cos(\theta)^2 a^2 + r^2}.$$
$g_{31} = 0.$
$g_{32} = 0.$
$$g_{33} = \frac{a^4\sin(\theta)^2 + a^2q^2\sin(\theta)^2 - a^2\sin(\theta)^2 - \sin(\theta)^2 r^2 + a^2\sin(\theta)^2 r^2 - 2ma^2\sin(\theta)^2 r}{\cos(\theta)^2 a^2 + r^2}.$$

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

$$\sqrt{\ } = \sqrt{\frac{a^4q^2\sin(\theta)^4 + a^4\sin(\theta)^2 - a^2\sin(\theta)^2 r^4 - 2ma^4\sin(\theta)^4 r - 4m^2a^2\sin(\theta)^2 r^2 + a^4\sin(\theta)^4 r^2 - a^2q^4\sin(\theta)^2 - a^6\sin(\theta)^2 + \sin(\theta)^2 r^4 + q^2\sin(\theta)^2 r^2 + 4ma^2q^2\sin(\theta)^2 r - a^2\sin(\theta)^4 r^2 - 2a^4\sin(\theta)^2 r^2 + a^2q^2\sin(\theta)^2 + a^6\sin(\theta)^4 + 4ma^2\sin(\theta)^2 r^3 - 2a^2q^2\sin(\theta)^2 r^2 + 4ma^4\sin(\theta)^2 r - 2m\sin(\theta)^2 r^3 + 4m^2a^2\sin(\theta)^4 r^2 - 4ma^2q^2\sin(\theta)^4 r - a^4\sin(\theta)^4 - 2a^4q^2\sin(\theta)^2 + 2a^2\sin(\theta)^2 r^2 + a^2q^4\sin(\theta)^4 - 2ma^2\sin(\theta)^2 r}{a^2 + r^2 + q^2 - 2mr}}.$$

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

$$g^{00} = -\frac{(a^2q^2 - a^2 - r^2 + a^2r^2 - 2ma^2r + a^4)(\cos(\theta)^2a^2 + r^2)}{a^2q^2 - a^4\sin(\theta)^2 - 2a^4r^2 + 4m^2a^2\sin(\theta)^2r^2 + a^2q^4\sin(\theta)^2 + 4ma^4r + a^6\sin(\theta)^2 - 4m^2a^2r^2 - a^2r^4 - 4ma^2q^2\sin(\theta)^2r - 2a^2q^2r^2 + a^4\sin(\theta)^2r^2 - 2a^4q^2 + 4ma^2q^2r - 2ma^4\sin(\theta)^2r + 4ma^2r^3 + 2a^2r^2 - 2mr^3 - a^2q^4 + a^4q^2\sin(\theta)^2 - a^6 - a^2\sin(\theta)^2r^2 + r^4 + q^2r^2 - 2ma^2r + a^4}.$$
$g^{01} = 0.$
$g^{02} = 0.$
$$g^{03} = \frac{(\cos(\theta)^2a^2 + r^2)(2mar - aq^2)}{a^2q^2 - a^4\sin(\theta)^2 - 2a^4r^2 + 4m^2a^2\sin(\theta)^2r^2 + a^2q^4\sin(\theta)^2 + 4ma^4r + a^6\sin(\theta)^2 - 4m^2a^2r^2 - a^2r^4 - 4ma^2q^2\sin(\theta)^2r - 2a^2q^2r^2 + a^4\sin(\theta)^2r^2 - 2a^4q^2 + 4ma^2q^2r - 2ma^4\sin(\theta)^2r + 4ma^2r^3 + 2a^2r^2 - 2mr^3 - a^2q^4 + a^4q^2\sin(\theta)^2 - a^6 - a^2\sin(\theta)^2r^2 + r^4 + q^2r^2 - 2ma^2r + a^4}.$$
$g^{10} = 0.$
$$g^{11} = -\frac{a^2 + r^2 + q^2 - 2mr}{\cos(\theta)^2a^2 + r^2}.$$
$g^{12} = 0.$
$g^{13} = 0.$
$g^{20} = 0.$
$g^{21} = 0.$
$$g^{22} = -\frac{1}{\cos(\theta)^2a^2 + r^2}.$$
$g^{23} = 0.$
$$g^{30} = \frac{(\cos(\theta)^2a^2 + r^2)(2mar - aq^2)}{a^2q^2 - a^4\sin(\theta)^2 - 2a^4r^2 + 4m^2a^2\sin(\theta)^2r^2 + a^2q^4\sin(\theta)^2 + 4ma^4r + a^6\sin(\theta)^2 - 4m^2a^2r^2 - a^2r^4 - 4ma^2q^2\sin(\theta)^2r - 2a^2q^2r^2 + a^4\sin(\theta)^2r^2 - 2a^4q^2 + 4ma^2q^2r - 2ma^4\sin(\theta)^2r + 4ma^2r^3 + 2a^2r^2 - 2mr^3 - a^2q^4 + a^4q^2\sin(\theta)^2 - a^6 - a^2\sin(\theta)^2r^2 + r^4 + q^2r^2 - 2ma^2r + a^4}.$$
$g^{31} = 0.$
$g^{32} = 0.$
$$g^{33} = -\frac{(\cos(\theta)^2a^2 + r^2)(a^2 + r^2 + q^2 - a^2\sin(\theta)^2 - 2mr)}{a^4q^2\sin(\theta)^4 + a^4\sin(\theta)^2 - a^2\sin(\theta)^2 r^4 - 2ma^4\sin(\theta)^4 r - 4m^2a^2\sin(\theta)^2 r^2 + a^4\sin(\theta)^4 r^2 - a^2q^4\sin(\theta)^2 - a^6\sin(\theta)^2 + \sin(\theta)^2 r^4 + q^2\sin(\theta)^2 r^2 + 4ma^2q^2\sin(\theta)^2 r - a^2\sin(\theta)^4 r^2 - 2a^4\sin(\theta)^2 r^2 + a^2q^2\sin(\theta)^2 + a^6\sin(\theta)^4 + 4ma^2\sin(\theta)^2 r^3 - 2a^2q^2\sin(\theta)^2 r^2 + 4ma^4\sin(\theta)^2 r - 2m\sin(\theta)^2 r^3 + 4m^2a^2\sin(\theta)^4 r^2 - 4ma^2q^2\sin(\theta)^4 r - a^4\sin(\theta)^4 - 2a^4q^2\sin(\theta)^2 + 2a^2\sin(\theta)^2 r^2 + a^2q^4\sin(\theta)^4 - 2ma^2\sin(\theta)^2 r}.$$

$\boxed{\Gamma^\sigma_{\mu\nu}}$

$\Gamma^0_{00} = 0.$
$$\Gamma^0_{01} = -\frac{\cos(\theta)^2ma^4 - 3ma^2q^2\sin(\theta)^2r^2 + \cos(\theta)^2a^4q^2r - \cos(\theta)^2ma^6 - a^6r + \cos(\theta)^2ma^2r^2 + 2m^2a^2\sin(\theta)^2r^3 + 2\cos(\theta)^2m^2a^4r - \cos(\theta)^2ma^4q^2 - a^4r^3 + 3ma^4r^2 - \cos(\theta)^2a^4r - mr^4 + ma^2r^4 + a^4q^2\sin(\theta)^2r - 2\cos(\theta)^2m^2a^4\sin(\theta)^2r - a^2q^4r + \cos(\theta)^2a^4r^3 + a^4r + a^6\sin(\theta)^2r - 2m^2a^2r^3 + \cos(\theta)^2a^6r + a^2q^4\sin(\theta)^2r - 3\cos(\theta)^2ma^4r^2 + a^2r^3 - ma^2r^2 - a^2q^2r^3 - 2a^4q^2r + a^4\sin(\theta)^2r^3 - \cos(\theta)^2a^2r^3 - 2ma^4\sin(\theta)^2r^2 + q^2r^3 + 3ma^2q^2r^2 + \cos(\theta)^2ma^4q^2\sin(\theta)^2 - a^4\sin(\theta)^2r + a^2q^2r - a^2\sin(\theta)^2r^3}{(\cos(\theta)^2a^2 + r^2)(a^2q^2 - a^4\sin(\theta)^2 - 2a^4r^2 + 4m^2a^2\sin(\theta)^2r^2 + a^2q^4\sin(\theta)^2 + 4ma^4r + a^6\sin(\theta)^2 - 4m^2a^2r^2 - a^2r^4 - 4ma^2q^2\sin(\theta)^2r - 2a^2q^2r^2 + a^4\sin(\theta)^2r^2 - 2a^4q^2 + 4ma^2q^2r - 2ma^4\sin(\theta)^2r + 4ma^2r^3 + 2a^2r^2 - 2mr^3 - a^2q^4 + a^4q^2\sin(\theta)^2 - a^6 - a^2\sin(\theta)^2r^2 + r^4 + q^2r^2 - 2ma^2r + a^4)}.$$
$$\Gamma^0_{02} = -\frac{4\cos(\theta)ma^4q^2\sin(\theta)^3r - 4\cos(\theta)^3m^2a^4\sin(\theta)r^2 - \cos(\theta)a^2q^2\sin(\theta)r^2 + 2\cos(\theta)ma^4\sin(\theta)r + 2\cos(\theta)a^6q^2\sin(\theta) + 2\cos(\theta)ma^2\sin(\theta)r^3 + \cos(\theta)a^4q^4\sin(\theta) - \cos(\theta)^3a^6\sin(\theta)r^2 + 2\cos(\theta)ma^6\sin(\theta)^3r - \cos(\theta)a^2q^4\sin(\theta)r^2 - 4\cos(\theta)m^2a^4\sin(\theta)^3r^2 - \cos(\theta)a^6q^2\sin(\theta)^3 - \cos(\theta)a^4\sin(\theta)r^2 - 2\cos(\theta)ma^4\sin(\theta)r^3 + 2\cos(\theta)^3ma^6\sin(\theta)r - \cos(\theta)a^6\sin(\theta)^3r^2 + 4\cos(\theta)ma^2q^2\sin(\theta)r^3 + 4\cos(\theta)^3ma^4q^2\sin(\theta)r - 4\cos(\theta)m^2a^2\sin(\theta)r^4 - \cos(\theta)a^4q^4\sin(\theta)^3 + \cos(\theta)a^8\sin(\theta) - \cos(\theta)a^4q^2\sin(\theta) - 4\cos(\theta)ma^6\sin(\theta)r + \cos(\theta)a^4q^2\sin(\theta)r^2 + \cdots}{(\cos(\theta)^2a^2 + r^2)(a^2q^2 - a^4\sin(\theta)^2 - 2a^4r^2 + 4m^2a^2\sin(\theta)^2r^2 + a^2q^4\sin(\theta)^2 + 4ma^4r + a^6\sin(\theta)^2 - 4m^2a^2r^2 - a^2r^4 - 4ma^2q^2\sin(\theta)^2r - 2a^2q^2r^2 + a^4\sin(\theta)^2r^2 - 2a^4q^2 + 4ma^2q^2r - 2ma^4\sin(\theta)^2r + 4ma^2r^3 + 2a^2r^2 - 2mr^3 - a^2q^4 + a^4q^2\sin(\theta)^2 - a^6 - a^2\sin(\theta)^2r^2 + r^4 + q^2r^2 - 2ma^2r + a^4)}$$
$\Gamma^0_{03} = 0.$
$$\Gamma^0_{10} = -\frac{\cos(\theta)^2ma^4 - 3ma^2q^2\sin(\theta)^2r^2 + \cos(\theta)^2a^4q^2r - \cos(\theta)^2ma^6 - a^6r + \cos(\theta)^2ma^2r^2 + 2m^2a^2\sin(\theta)^2r^3 + 2\cos(\theta)^2m^2a^4r - \cos(\theta)^2ma^4q^2 - a^4r^3 + 3ma^4r^2 - \cos(\theta)^2a^4r - mr^4 + ma^2r^4 + a^4q^2\sin(\theta)^2r - 2\cos(\theta)^2m^2a^4\sin(\theta)^2r - a^2q^4r + \cos(\theta)^2a^4r^3 + a^4r + a^6\sin(\theta)^2r - 2m^2a^2r^3 + \cos(\theta)^2a^6r + a^2q^4\sin(\theta)^2r - 3\cos(\theta)^2ma^4r^2 + a^2r^3 - ma^2r^2 - a^2q^2r^3 - 2a^4q^2r + a^4\sin(\theta)^2r^3 - \cos(\theta)^2a^2r^3 - 2ma^4\sin(\theta)^2r^2 + q^2r^3 + 3ma^2q^2r^2 + \cos(\theta)^2ma^4q^2\sin(\theta)^2 - a^4\sin(\theta)^2r + a^2q^2r - a^2\sin(\theta)^2r^3}{(\cos(\theta)^2a^2 + r^2)(a^2q^2 - a^4\sin(\theta)^2 - 2a^4r^2 + 4m^2a^2\sin(\theta)^2r^2 + a^2q^4\sin(\theta)^2 + 4ma^4r + a^6\sin(\theta)^2 - 4m^2a^2r^2 - a^2r^4 - 4ma^2q^2\sin(\theta)^2r - 2a^2q^2r^2 + a^4\sin(\theta)^2r^2 - 2a^4q^2 + 4ma^2q^2r - 2ma^4\sin(\theta)^2r + 4ma^2r^3 + 2a^2r^2 - 2mr^3 - a^2q^4 + a^4q^2\sin(\theta)^2 - a^6 - a^2\sin(\theta)^2r^2 + r^4 + q^2r^2 - 2ma^2r + a^4)}.$$
$\Gamma^0_{11} = 0.$
$\Gamma^0_{12} = 0.$
$$\Gamma^0_{13} = -\frac{ma^5\sin(\theta)^2 - ma^3\sin(\theta)^2r^2 + ma\sin(\theta)^2r^2 - aq^2\sin(\theta)^2r + a^3q^2\sin(\theta)^2r - ma^3\sin(\theta)^2}{a^2q^2 - a^4\sin(\theta)^2 - 2a^4r^2 + 4m^2a^2\sin(\theta)^2r^2 + a^2q^4\sin(\theta)^2 + 4ma^4r + a^6\sin(\theta)^2 - 4m^2a^2r^2 - a^2r^4 - 4ma^2q^2\sin(\theta)^2r - 2a^2q^2r^2 + a^4\sin(\theta)^2r^2 - 2a^4q^2 + 4ma^2q^2r - 2ma^4\sin(\theta)^2r + 4ma^2r^3 + 2a^2r^2 - 2mr^3 - a^2q^4 + a^4q^2\sin(\theta)^2 - a^6 - a^2\sin(\theta)^2r^2 + r^4 + q^2r^2 - 2ma^2r + a^4}.$$
$$\Gamma^0_{20} = -\frac{4\cos(\theta)ma^4q^2\sin(\theta)^3r - 4\cos(\theta)^3m^2a^4\sin(\theta)r^2 - \cos(\theta)a^2q^2\sin(\theta)r^2 + 2\cos(\theta)ma^4\sin(\theta)r + 2\cos(\theta)a^6q^2\sin(\theta) + 2\cos(\theta)ma^2\sin(\theta)r^3 + \cos(\theta)a^4q^4\sin(\theta) - \cos(\theta)^3a^6\sin(\theta)r^2 + 2\cos(\theta)ma^6\sin(\theta)^3r - \cos(\theta)a^2q^4\sin(\theta)r^2 - 4\cos(\theta)m^2a^4\sin(\theta)^3r^2 - \cos(\theta)a^6q^2\sin(\theta)^3 - \cos(\theta)a^4\sin(\theta)r^2 - 2\cos(\theta)ma^4\sin(\theta)r^3 + 2\cos(\theta)^3ma^6\sin(\theta)r - \cos(\theta)a^6\sin(\theta)^3r^2 + 4\cos(\theta)ma^2q^2\sin(\theta)r^3 + 4\cos(\theta)^3ma^4q^2\sin(\theta)r - 4\cos(\theta)m^2a^2\sin(\theta)r^4 - \cos(\theta)a^4q^4\sin(\theta)^3 + \cos(\theta)a^8\sin(\theta) - \cos(\theta)a^4q^2\sin(\theta) - 4\cos(\theta)ma^6\sin(\theta)r + \cos(\theta)a^4q^2\sin(\theta)r^2 + \cdots}{(\cos(\theta)^2a^2 + r^2)(a^2q^2 - a^4\sin(\theta)^2 - 2a^4r^2 + 4m^2a^2\sin(\theta)^2r^2 + a^2q^4\sin(\theta)^2 + 4ma^4r + a^6\sin(\theta)^2 - 4m^2a^2r^2 - a^2r^4 - 4ma^2q^2\sin(\theta)^2r - 2a^2q^2r^2 + a^4\sin(\theta)^2r^2 - 2a^4q^2 + 4ma^2q^2r - 2ma^4\sin(\theta)^2r + 4ma^2r^3 + 2a^2r^2 - 2mr^3 - a^2q^4 + a^4q^2\sin(\theta)^2 - a^6 - a^2\sin(\theta)^2r^2 + r^4 + q^2r^2 - 2ma^2r + a^4)}$$
$\Gamma^0_{21} = 0.$
$\Gamma^0_{22} = 0.$
$\Gamma^0_{23} = 0.$
$\Gamma^0_{30} = 0.$
$$\Gamma^0_{31} = -\frac{ma^5\sin(\theta)^2 - ma^3\sin(\theta)^2r^2 + ma\sin(\theta)^2r^2 - aq^2\sin(\theta)^2r + a^3q^2\sin(\theta)^2r - ma^3\sin(\theta)^2}{a^2q^2 - a^4\sin(\theta)^2 - 2a^4r^2 + 4m^2a^2\sin(\theta)^2r^2 + a^2q^4\sin(\theta)^2 + 4ma^4r + a^6\sin(\theta)^2 - 4m^2a^2r^2 - a^2r^4 - 4ma^2q^2\sin(\theta)^2r - 2a^2q^2r^2 + a^4\sin(\theta)^2r^2 - 2a^4q^2 + 4ma^2q^2r - 2ma^4\sin(\theta)^2r + 4ma^2r^3 + 2a^2r^2 - 2mr^3 - a^2q^4 + a^4q^2\sin(\theta)^2 - a^6 - a^2\sin(\theta)^2r^2 + r^4 + q^2r^2 - 2ma^2r + a^4}.$$
$\Gamma^0_{32} = 0.$
$\Gamma^0_{33} = 0.$

$$\Gamma^1_{00} = \frac{(mr^2 - q^2 r + \cos(\theta)^2 a^2 r + a^2 \sin(\theta)^2 r - a^2 r - \cos(\theta)^2 m a^2)(a^2 + r^2 + q^2 - 2mr)}{(\cos(\theta)^2 a^2 + r^2)^3}.$$
$\Gamma^1_{01} = 0.$
$\Gamma^1_{02} = 0.$
$$\Gamma^1_{03} = -\frac{(ma \sin(\theta)^2 r^2 - a q^2 \sin(\theta)^2 r - \cos(\theta)^2 m a^3 \sin(\theta)^2)(a^2 + r^2 + q^2 - 2mr)}{(\cos(\theta)^2 a^2 + r^2)^3}.$$
$\Gamma^1_{10} = 0.$
$$\Gamma^1_{11} = -\frac{mr^2 - q^2 r + \cos(\theta)^2 a^2 r - a^2 r - \cos(\theta)^2 m a^2}{(\cos(\theta)^2 a^2 + r^2)(a^2 + r^2 + q^2 - 2mr)}.$$
$$\Gamma^1_{12} = -\frac{\cos(\theta) a^2 \sin(\theta)}{\cos(\theta)^2 a^2 + r^2}.$$
$\Gamma^1_{13} = 0.$
$\Gamma^1_{20} = 0.$
$$\Gamma^1_{21} = -\frac{\cos(\theta) a^2 \sin(\theta)}{\cos(\theta)^2 a^2 + r^2}.$$
$$\Gamma^1_{22} = -\frac{(a^2 + r^2 + q^2 - 2mr) r}{\cos(\theta)^2 a^2 + r^2}.$$
$\Gamma^1_{23} = 0.$
$$\Gamma^1_{30} = -\frac{(ma \sin(\theta)^2 r^2 - a q^2 \sin(\theta)^2 r - \cos(\theta)^2 m a^3 \sin(\theta)^2)(a^2 + r^2 + q^2 - 2mr)}{(\cos(\theta)^2 a^2 + r^2)^3}.$$
$\Gamma^1_{31} = 0.$
$\Gamma^1_{32} = 0.$
$$\Gamma^1_{33} = -\frac{(\cos(\theta)^2 a^2 \sin(\theta)^2 r - \cos(\theta)^2 a^4 \sin(\theta)^2 r - m a^2 \sin(\theta)^2 r^2 + \cos(\theta)^2 m a^4 \sin(\theta)^2 - a^2 \sin(\theta)^2 r + a^2 q^2 \sin(\theta)^2 r + a^4 \sin(\theta)^2 r)(a^2 + r^2 + q^2 - 2mr)}{(\cos(\theta)^2 a^2 + r^2)^3}.$$

$$\Gamma^2_{00} = -\frac{2\cos(\theta) m a^2 \sin(\theta) r + \cos(\theta)^3 a^4 \sin(\theta) + \cos(\theta) a^4 \sin(\theta)^3 - \cos(\theta) a^2 q^2 \sin(\theta) - \cos(\theta) a^4 \sin(\theta)}{(\cos(\theta)^2 a^2 + r^2)^3}.$$
$\Gamma^2_{01} = 0.$
$\Gamma^2_{02} = 0.$
$$\Gamma^2_{03} = \frac{2\cos(\theta)^3 m a^3 \sin(\theta) r - \cos(\theta) a^3 q^2 \sin(\theta)^3 + 2\cos(\theta) m a^3 \sin(\theta)^3 r - \cos(\theta)^3 a^3 q^2 \sin(\theta) - \cos(\theta) a q^2 \sin(\theta) r^2 + 2\cos(\theta) m a \sin(\theta) r^3}{(\cos(\theta)^2 a^2 + r^2)^3}.$$
$\Gamma^2_{10} = 0.$
$$\Gamma^2_{11} = \frac{\cos(\theta) a^2 \sin(\theta)}{(\cos(\theta)^2 a^2 + r^2)(a^2 + r^2 + q^2 - 2mr)}.$$
$$\Gamma^2_{12} = \frac{r}{\cos(\theta)^2 a^2 + r^2}.$$
$\Gamma^2_{13} = 0.$
$\Gamma^2_{20} = 0.$
$$\Gamma^2_{21} = \frac{r}{\cos(\theta)^2 a^2 + r^2}.$$
$$\Gamma^2_{22} = -\frac{\cos(\theta) a^2 \sin(\theta)}{\cos(\theta)^2 a^2 + r^2}.$$
$\Gamma^2_{23} = 0.$
$$\Gamma^2_{30} = \frac{2\cos(\theta)^3 m a^3 \sin(\theta) r - \cos(\theta) a^3 q^2 \sin(\theta)^3 + 2\cos(\theta) m a^3 \sin(\theta)^3 r - \cos(\theta)^3 a^3 q^2 \sin(\theta) - \cos(\theta) a q^2 \sin(\theta) r^2 + 2\cos(\theta) m a \sin(\theta) r^3}{(\cos(\theta)^2 a^2 + r^2)^3}.$$
$\Gamma^2_{31} = 0.$
$\Gamma^2_{32} = 0.$
$$\Gamma^2_{33} = \frac{\cos(\theta) a^2 q^2 \sin(\theta) r^2 - \cos(\theta) a^2 \sin(\theta) r^2 - \cos(\theta) \sin(\theta) r^4 - 2\cos(\theta) m a^2 \sin(\theta) r^3 + \cos(\theta) a^4 \sin(\theta) r^2 + \cos(\theta)^3 a^4 q^2 \sin(\theta) - \cos(\theta)^3 a^4 \sin(\theta) + \cos(\theta)^3 a^4 \sin(\theta) r^2 - \cos(\theta) a^2 \sin(\theta)^3 r^2 - \cos(\theta) a^4 \sin(\theta)^3 - 2\cos(\theta) m a^4 \sin(\theta)^3 r + \cos(\theta) a^2 \sin(\theta) r^4 + \cos(\theta)^3 a^6 \sin(\theta) + \cos(\theta) a^4 q^2 \sin(\theta)^3 - \cos(\theta)^3 a^2 \sin(\theta) r^2 + \cos(\theta) a^4 \sin(\theta)^3 r^2 - 2\cos(\theta)^3 m a^4 \sin(\theta) r + \cos(\theta) a^6 \sin(\theta)^3}{(\cos(\theta)^2 a^2 + r^2)^3}.$$

$\Gamma^3_{00} = 0.$
$$\Gamma^3_{01} = -\frac{a q^2 r - m a r^2 + m a^3 - m a^3 \sin(\theta)^2}{a^2 q^2 - a^4 \sin(\theta)^2 - 2a^4 r^2 + 4m^2 a^2 \sin(\theta)^2 r^2 + a^2 q^4 \sin(\theta)^2 + 4 m a^4 r + a^6 \sin(\theta)^2 - 4m^2 a^2 r^2 - a^2 r^4 - 4 m a^2 q^2 \sin(\theta)^2 r - 2a^2 q^2 r^2 + a^4 \sin(\theta)^2 r^2 - 2a^4 q^2 + 4 m a^2 q^2 r - 2 m a^4 \sin(\theta)^2 r + 4 m a^2 r^3 + 2a^2 r^2 - 2mr^3 - a^2 q^4 + a^4 q^2 \sin(\theta)^2 - a^6 - a^2 \sin(\theta)^2 r^2 + r^4 + q^2 r^2 - 2 m a^2 r + a^4}.$$
$$\Gamma^3_{02} = -\frac{4\cos(\theta) m a q^2 r - \cos(\theta) a q^2 r^2 + 2\cos(\theta) m a r^3 + 2\cos(\theta) m a^3 r - 4\cos(\theta) m^2 a r^2 - \cos(\theta) a q^4 - \cos(\theta) a^3 q^2}{(a^2 q^2 - a^4 \sin(\theta)^2 - 2a^4 r^2 + 4m^2 a^2 \sin(\theta)^2 r^2 + a^2 q^4 \sin(\theta)^2 + 4 m a^4 r + a^6 \sin(\theta)^2 - 4m^2 a^2 r^2 - a^2 r^4 - 4 m a^2 q^2 \sin(\theta)^2 r - 2a^2 q^2 r^2 + a^4 \sin(\theta)^2 r^2 - 2a^4 q^2 + 4 m a^2 q^2 r - 2 m a^4 \sin(\theta)^2 r + 4 m a^2 r^3 + 2a^2 r^2 - 2mr^3 - a^2 q^4 + a^4 q^2 \sin(\theta)^2 - a^6 - a^2 \sin(\theta)^2 r^2 + r^4 + q^2 r^2 - 2 m a^2 r + a^4) \sin(\theta)}.$$
$\Gamma^3_{03} = 0.$
$$\Gamma^3_{10} = -\frac{a q^2 r - m a r^2 + m a^3 - m a^3 \sin(\theta)^2}{a^2 q^2 - a^4 \sin(\theta)^2 - 2a^4 r^2 + 4m^2 a^2 \sin(\theta)^2 r^2 + a^2 q^4 \sin(\theta)^2 + 4 m a^4 r + a^6 \sin(\theta)^2 - 4m^2 a^2 r^2 - a^2 r^4 - 4 m a^2 q^2 \sin(\theta)^2 r - 2a^2 q^2 r^2 + a^4 \sin(\theta)^2 r^2 - 2a^4 q^2 + 4 m a^2 q^2 r - 2 m a^4 \sin(\theta)^2 r + 4 m a^2 r^3 + 2a^2 r^2 - 2mr^3 - a^2 q^4 + a^4 q^2 \sin(\theta)^2 - a^6 - a^2 \sin(\theta)^2 r^2 + r^4 + q^2 r^2 - 2 m a^2 r + a^4}.$$
$\Gamma^3_{11} = 0.$
$\Gamma^3_{12} = 0.$
$$\Gamma^3_{13} = \frac{3ma^2q^2\sin(\theta)^2r^2 - \cos(\theta)^2a^4q^2r + \cos(\theta)^2ma^6 + a^6r - 2\cos(\theta)^2ma^2r^2 - 2m^2a^2\sin(\theta)^2r^3 - 2\cos(\theta)^2m^2a^4r + \cos(\theta)^2ma^4q^2 + a^4r^3 - 3ma^4r^2 + \cos(\theta)^2a^4r + \cos(\theta)^2a^2q^2r - ma^2r^4 - a^4q^2\sin(\theta)^2r + 2\cos(\theta)^2m^2a^4\sin(\theta)^2r + a^2q^4r - \cos(\theta)^2a^4\sin(\theta)^2r - \cos(\theta)^2a^4r^3 - a^4r - a^6\sin(\theta)^2r + 2m^2a^2r^3 - \cos(\theta)^2a^6r - a^2q^4\sin(\theta)^2r + 3\cos(\theta)^2ma^4r^2 - a^2r^3 + 2ma^2r^2 + a^2q^2r^3 + 2a^4q^2r + \cos(\theta)^2a^2r^3 + ma^4\sin(\theta)^2r^2 - \cos(\theta)^2ma^6\sin(\theta)^2 + \cos(\theta)^2a^6\sin(\theta)^2r - 3ma^2q^2r^2 - \cos(\theta)^2ma^4q^2\sin(\theta)^2 + a^4\sin(\theta)^2r - a^2q^2r}{(\cos(\theta)^2a^2 + r^2)(a^2q^2 - a^4\sin(\theta)^2 - 2a^4r^2 + 4m^2a^2\sin(\theta)^2r^2 + a^2q^4\sin(\theta)^2 + 4ma^4r + a^6\sin(\theta)^2 - 4m^2a^2r^2 - a^2r^4 - 4ma^2q^2\sin(\theta)^2r - 2a^2q^2r^2 + a^4\sin(\theta)^2r^2 - 2a^4q^2 + 4ma^2q^2r - 2ma^4\sin(\theta)^2r + 4ma^2r^3 + 2a^2r^2 - 2mr^3 - a^2q^4 + a^4q^2\sin(\theta)^2 - a^6 - a^2\sin(\theta)^2r^2 + r^4 + q^2r^2 - 2ma^2r + a^4)}.$$
$$\Gamma^3_{20} = -\frac{4\cos(\theta) m a q^2 r - \cos(\theta) a q^2 r^2 + 2\cos(\theta) m a r^3 + 2\cos(\theta) m a^3 r - 4\cos(\theta) m^2 a r^2 - \cos(\theta) a q^4 - \cos(\theta) a^3 q^2}{(a^2 q^2 - a^4 \sin(\theta)^2 - 2a^4 r^2 + 4m^2 a^2 \sin(\theta)^2 r^2 + a^2 q^4 \sin(\theta)^2 + 4 m a^4 r + a^6 \sin(\theta)^2 - 4m^2 a^2 r^2 - a^2 r^4 - 4 m a^2 q^2 \sin(\theta)^2 r - 2a^2 q^2 r^2 + a^4 \sin(\theta)^2 r^2 - 2a^4 q^2 + 4 m a^2 q^2 r - 2 m a^4 \sin(\theta)^2 r + 4 m a^2 r^3 + 2a^2 r^2 - 2mr^3 - a^2 q^4 + a^4 q^2 \sin(\theta)^2 - a^6 - a^2 \sin(\theta)^2 r^2 + r^4 + q^2 r^2 - 2 m a^2 r + a^4) \sin(\theta)}.$$
$\Gamma^3_{21} = 0.$
$\Gamma^3_{22} = 0.$
$$\Gamma^3_{23} = \frac{\cos(\theta) a^2 \sin(\theta)^2 + \cos(\theta)^3 a^2 + \cos(\theta) r^2}{(\cos(\theta)^2 a^2 + r^2) \sin(\theta)}.$$
$\Gamma^3_{30} = 0.$
$$\Gamma^3_{31} = \frac{3ma^2q^2\sin(\theta)^2r^2 - \cos(\theta)^2a^4q^2r + \cos(\theta)^2ma^6 + a^6r - 2\cos(\theta)^2ma^2r^2 - 2m^2a^2\sin(\theta)^2r^3 - 2\cos(\theta)^2m^2a^4r + \cos(\theta)^2ma^4q^2 + a^4r^3 - 3ma^4r^2 + \cos(\theta)^2a^4r + \cos(\theta)^2a^2q^2r - ma^2r^4 - a^4q^2\sin(\theta)^2r + 2\cos(\theta)^2m^2a^4\sin(\theta)^2r + a^2q^4r - \cos(\theta)^2a^4\sin(\theta)^2r - \cos(\theta)^2a^4r^3 - a^4r - a^6\sin(\theta)^2r + 2m^2a^2r^3 - \cos(\theta)^2a^6r - a^2q^4\sin(\theta)^2r + 3\cos(\theta)^2ma^4r^2 - a^2r^3 + 2ma^2r^2 + a^2q^2r^3 + 2a^4q^2r + \cos(\theta)^2a^2r^3 + ma^4\sin(\theta)^2r^2 - \cos(\theta)^2ma^6\sin(\theta)^2 + \cos(\theta)^2a^6\sin(\theta)^2r - 3ma^2q^2r^2 - \cos(\theta)^2ma^4q^2\sin(\theta)^2 + a^4\sin(\theta)^2r - a^2q^2r}{(\cos(\theta)^2a^2 + r^2)(a^2q^2 - a^4\sin(\theta)^2 - 2a^4r^2 + 4m^2a^2\sin(\theta)^2r^2 + a^2q^4\sin(\theta)^2 + 4ma^4r + a^6\sin(\theta)^2 - 4m^2a^2r^2 - a^2r^4 - 4ma^2q^2\sin(\theta)^2r - 2a^2q^2r^2 + a^4\sin(\theta)^2r^2 - 2a^4q^2 + 4ma^2q^2r - 2ma^4\sin(\theta)^2r + 4ma^2r^3 + 2a^2r^2 - 2mr^3 - a^2q^4 + a^4q^2\sin(\theta)^2 - a^6 - a^2\sin(\theta)^2r^2 + r^4 + q^2r^2 - 2ma^2r + a^4)}.$$
$$\Gamma^3_{32} = \frac{\cos(\theta) a^2 \sin(\theta)^2 + \cos(\theta)^3 a^2 + \cos(\theta) r^2}{(\cos(\theta)^2 a^2 + r^2) \sin(\theta)}.$$
$\Gamma^3_{33} = 0.$

$\boxed{G^{\mu}_{\nu:\mu} = 0}$

$G^{\mu}_{0:\mu} = 0.$
$G^{\mu}_{1:\mu} = 0.$
$G^{\mu}_{2:\mu} = 0.$
$G^{\mu}_{3:\mu} = 0.$

$\boxed{g^{\mu\nu}\,\Gamma^{\lambda}_{\mu\nu} = 0?}$

$g^{\mu\nu}\,\Gamma^0_{\mu\nu} = 0.$
$g^{\mu\nu}\,\Gamma^1_{\mu\nu} =$ [illegible]
$g^{\mu\nu}\,\Gamma^2_{\mu\nu} =$ [illegible]
$g^{\mu\nu}\,\Gamma^3_{\mu\nu} = 0.$