Robertson-Walker-Schwarzschild Metric with c(t) in cartesian coordinates:

$\boxed{x^\mu}$

$x^0 = t.$
$x^1 = x.$
$x^2 = y.$
$x^3 = z.$

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

$g_{00} = c(t)^2.$
$g_{01} = 0.$
$g_{02} = 0.$
$g_{03} = 0.$
$g_{10} = 0.$
$$g_{11} = -\frac{R(t)^2(-1 + z^2\kappa + y^2\kappa)}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$$
$$g_{12} = \frac{yxR(t)^2\kappa}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$$
$$g_{13} = \frac{zxR(t)^2\kappa}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$$
$g_{20} = 0.$
$$g_{21} = \frac{yxR(t)^2\kappa}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$$
$$g_{22} = -\frac{(-1 + z^2\kappa + x^2\kappa)R(t)^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$$
$$g_{23} = \frac{zyR(t)^2\kappa}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$$
$g_{30} = 0.$
$$g_{31} = \frac{zxR(t)^2\kappa}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$$
$$g_{32} = \frac{zyR(t)^2\kappa}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$$
$$g_{33} = -\frac{(-1 + x^2\kappa + y^2\kappa)R(t)^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$$

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

$$\surd = \sqrt{-\frac{R(t)^6c(t)^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}}.$$

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

$$g^{00} = \frac{1}{c(t)^2}.$$
$g^{01} = 0.$
$g^{02} = 0.$
$g^{03} = 0.$
$g^{10} = 0.$
$$g^{11} = \frac{-1 + x^2\kappa}{R(t)^2}.$$
$$g^{12} = \frac{yx\kappa}{R(t)^2}.$$
$$g^{13} = \frac{zx\kappa}{R(t)^2}.$$
$g^{20} = 0.$
$$g^{21} = \frac{yx\kappa}{R(t)^2}.$$
$$g^{22} = \frac{-1 + y^2\kappa}{R(t)^2}.$$
$$g^{23} = \frac{zy\kappa}{R(t)^2}.$$
$g^{30} = 0.$
$$g^{31} = \frac{zx\kappa}{R(t)^2}.$$
$$g^{32} = \frac{zy\kappa}{R(t)^2}.$$
$$g^{33} = \frac{-1 + z^2\kappa}{R(t)^2}.$$

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

$$\Gamma^0_{00} = \frac{\dot{c}(t)}{c(t)}.$$
$\Gamma^0_{01} = 0.$
$\Gamma^0_{02} = 0.$
$\Gamma^0_{03} = 0.$
$\Gamma^0_{10} = 0.$
$$\Gamma^0_{11} = \frac{\dot{R}(t)R(t)(-1 + z^2\kappa + y^2\kappa)}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^2}.$$
$$\Gamma^0_{12} = -\frac{yx\dot{R}(t)R(t)\kappa}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^2}.$$
$$\Gamma^0_{13} = -\frac{zx\dot{R}(t)R(t)\kappa}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^2}.$$
$\Gamma^0_{20} = 0.$
$$\Gamma^0_{21} = -\frac{yx\dot{R}(t)R(t)\kappa}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^2}.$$
$$\Gamma^0_{22} = \frac{(-1 + z^2\kappa + x^2\kappa)\dot{R}(t)R(t)}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^2}.$$
$$\Gamma^0_{23} = -\frac{zy\dot{R}(t)R(t)\kappa}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^2}.$$
$\Gamma^0_{30} = 0.$
$$\Gamma^0_{31} = -\frac{zx\dot{R}(t)R(t)\kappa}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^2}.$$
$$\Gamma^0_{32} = -\frac{zy\dot{R}(t)R(t)\kappa}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^2}.$$
$$\Gamma^0_{33} = \frac{(-1 + x^2\kappa + y^2\kappa)\dot{R}(t)R(t)}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^2}.$$

$\Gamma^1_{00} = 0.$

$\Gamma^1_{01} = \frac{\dot{R}(t)}{R(t)}.$

$\Gamma^1_{02} = 0.$

$\Gamma^1_{03} = 0.$

$\Gamma^1_{10} = \frac{\dot{R}(t)}{R(t)}.$

$\Gamma^1_{11} = \frac{z^2x\kappa^2 - x\kappa + y^2x\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^1_{12} = -\frac{yx^2\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^1_{13} = -\frac{zx^2\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^1_{20} = 0.$

$\Gamma^1_{21} = -\frac{yx^2\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^1_{22} = \frac{z^2x\kappa^2 - x\kappa + x^3\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^1_{23} = -\frac{zyx\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^1_{30} = 0.$

$\Gamma^1_{31} = -\frac{zx^2\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^1_{32} = -\frac{zyx\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^1_{33} = -\frac{x\kappa - x^3\kappa^2 - y^2x\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^2_{00} = 0.$

$\Gamma^2_{01} = 0.$

$\Gamma^2_{02} = \frac{\dot{R}(t)}{R(t)}.$

$\Gamma^2_{03} = 0.$

$\Gamma^2_{10} = 0.$

$\Gamma^2_{11} = -\frac{y\kappa - z^2y\kappa^2 - y^3\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^2_{12} = -\frac{y^2x\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^2_{13} = -\frac{zyx\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^2_{20} = \frac{\dot{R}(t)}{R(t)}.$

$\Gamma^2_{21} = -\frac{y^2x\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^2_{22} = -\frac{y\kappa - z^2y\kappa^2 - yx^2\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^2_{23} = -\frac{zy^2\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^2_{30} = 0.$

$\Gamma^2_{31} = -\frac{zyx\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^2_{32} = -\frac{zy^2\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^2_{33} = -\frac{y\kappa - yx^2\kappa^2 - y^3\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^3_{00} = 0.$

$\Gamma^3_{01} = 0.$

$\Gamma^3_{02} = 0.$

$\Gamma^3_{03} = \frac{\dot{R}(t)}{R(t)}.$

$\Gamma^3_{10} = 0.$

$\Gamma^3_{11} = \frac{zy^2\kappa^2 + z^3\kappa^2 - z\kappa}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^3_{12} = -\frac{zyx\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^3_{13} = -\frac{z^2x\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^3_{20} = 0.$

$\Gamma^3_{21} = -\frac{zyx\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^3_{22} = \frac{z^3\kappa^2 + zx^2\kappa^2 - z\kappa}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^3_{23} = -\frac{z^2y\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^3_{30} = \frac{\dot{R}(t)}{R(t)}.$

$\Gamma^3_{31} = -\frac{z^2x\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^3_{32} = -\frac{z^2y\kappa^2}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\Gamma^3_{33} = \frac{zy^2\kappa^2 + zx^2\kappa^2 - z\kappa}{-1 + z^2\kappa + x^2\kappa + y^2\kappa}.$

$\boxed{R_{\mu\nu}}$

$$R_{00} = -3\frac{\dot{c}(t)\dot{R}(t) - \ddot{R}(t)c(t)}{R(t)c(t)}.$$
$$R_{01} = 0.$$
$$R_{02} = 0.$$
$$R_{03} = 0.$$
$$R_{10} = 0.$$
$$R_{11} = \frac{\dot{c}(t)y^2\dot{R}(t)R(t)\kappa - \ddot{R}(t)z^2R(t)\kappa c(t) - \dot{c}(t)\dot{R}(t)R(t) - 2z^2\kappa^2c(t)^3 - 2y^2\dot{R}(t)^2\kappa c(t) - 2z^2\dot{R}(t)^2\kappa c(t) - 2y^2\kappa^2c(t)^3 + \ddot{R}(t)R(t)c(t) + 2\dot{R}(t)^2c(t) - \ddot{R}(t)y^2R(t)\kappa c(t) + \dot{c}(t)z^2\dot{R}(t)R(t)\kappa + 2\kappa c(t)^3}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^3}.$$
$$R_{12} = -\frac{\dot{c}(t)yx\dot{R}(t)R(t)\kappa - \ddot{R}(t)yxR(t)\kappa c(t) - 2yx\kappa^2c(t)^3 - 2yx\dot{R}(t)^2\kappa c(t)}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^3}.$$
$$R_{13} = \frac{2zx\dot{R}(t)^2\kappa c(t) + 2zx\kappa^2c(t)^3 + \ddot{R}(t)zxR(t)\kappa c(t) - \dot{c}(t)zx\dot{R}(t)R(t)\kappa}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^3}.$$
$$R_{20} = 0.$$
$$R_{21} = -\frac{\dot{c}(t)yx\dot{R}(t)R(t)\kappa - \ddot{R}(t)yxR(t)\kappa c(t) - 2yx\kappa^2c(t)^3 - 2yx\dot{R}(t)^2\kappa c(t)}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^3}.$$
$$R_{22} = -\frac{2x^2\dot{R}(t)^2\kappa c(t) + 2x^2\kappa^2c(t)^3 + \ddot{R}(t)z^2R(t)\kappa c(t) + \dot{c}(t)\dot{R}(t)R(t) + 2z^2\kappa^2c(t)^3 - \dot{c}(t)x^2\dot{R}(t)R(t)\kappa + 2z^2\dot{R}(t)^2\kappa c(t) - \ddot{R}(t)R(t)c(t) - 2\dot{R}(t)^2c(t) - \dot{c}(t)z^2\dot{R}(t)R(t)\kappa + \ddot{R}(t)x^2R(t)\kappa c(t) - 2\kappa c(t)^3}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^3}.$$
$$R_{23} = \frac{2zy\kappa^2c(t)^3 + 2zy\dot{R}(t)^2\kappa c(t) + \ddot{R}(t)zyR(t)\kappa c(t) - \dot{c}(t)zy\dot{R}(t)R(t)\kappa}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^3}.$$
$$R_{30} = 0.$$
$$R_{31} = \frac{2zx\dot{R}(t)^2\kappa c(t) + 2zx\kappa^2c(t)^3 + \ddot{R}(t)zxR(t)\kappa c(t) - \dot{c}(t)zx\dot{R}(t)R(t)\kappa}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^3}.$$
$$R_{32} = \frac{2zy\kappa^2c(t)^3 + 2zy\dot{R}(t)^2\kappa c(t) + \ddot{R}(t)zyR(t)\kappa c(t) - \dot{c}(t)zy\dot{R}(t)R(t)\kappa}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^3}.$$
$$R_{33} = -\frac{2x^2\dot{R}(t)^2\kappa c(t) + 2x^2\kappa^2c(t)^3 - \dot{c}(t)y^2\dot{R}(t)R(t)\kappa + \dot{c}(t)\dot{R}(t)R(t) + 2y^2\dot{R}(t)^2\kappa c(t) - \dot{c}(t)x^2\dot{R}(t)R(t)\kappa + 2y^2\kappa^2c(t)^3 - \ddot{R}(t)R(t)c(t) - 2\dot{R}(t)^2c(t) + \ddot{R}(t)y^2R(t)\kappa c(t) + \ddot{R}(t)x^2R(t)\kappa c(t) - 2\kappa c(t)^3}{(-1 + z^2\kappa + x^2\kappa + y^2\kappa)c(t)^3}.$$

$\boxed{R^{\mu}{}_{\nu}}$

$$R^0{}_0 = 3\frac{\ddot{R}(t)}{R(t)c(t)^2} - 3\frac{\dot{c}(t)\dot{R}(t)}{R(t)c(t)^3}.$$
$$R^0{}_1 = 0.$$
$$R^0{}_2 = 0.$$
$$R^0{}_3 = 0.$$
$$R^1{}_0 = 0.$$
$$R^1{}_1 = \frac{\ddot{R}(t)}{R(t)c(t)^2} + 2\frac{\dot{R}(t)^2}{R(t)^2c(t)^2} - \frac{\dot{c}(t)\dot{R}(t)}{R(t)c(t)^3} + 2\frac{\kappa}{R(t)^2}.$$
$$R^1{}_2 = 0.$$
$$R^1{}_3 = 0.$$
$$R^2{}_0 = 0.$$
$$R^2{}_1 = 0.$$
$$R^2{}_2 = \frac{\ddot{R}(t)}{R(t)c(t)^2} + 2\frac{\dot{R}(t)^2}{R(t)^2c(t)^2} - \frac{\dot{c}(t)\dot{R}(t)}{R(t)c(t)^3} + 2\frac{\kappa}{R(t)^2}.$$
$$R^2{}_3 = 0.$$
$$R^3{}_0 = 0.$$
$$R^3{}_1 = 0.$$
$$R^3{}_2 = 0.$$
$$R^3{}_3 = \frac{\ddot{R}(t)}{R(t)c(t)^2} + 2\frac{\dot{R}(t)^2}{R(t)^2c(t)^2} - \frac{\dot{c}(t)\dot{R}(t)}{R(t)c(t)^3} + 2\frac{\kappa}{R(t)^2}.$$

$\boxed{R}$

$$R = 6\frac{\ddot{R}(t)}{R(t)c(t)^2} + 6\frac{\dot{R}(t)^2}{R(t)^2c(t)^2} - 6\frac{\dot{c}(t)\dot{R}(t)}{R(t)c(t)^3} + 6\frac{\kappa}{R(t)^2}.$$

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

$$G^0{}_0 = -3\frac{\dot{R}(t)^2 + \kappa c(t)^2}{R(t)^2c(t)^2}.$$
$$G^0{}_1 = 0.$$
$$G^0{}_2 = 0.$$
$$G^0{}_3 = 0.$$
$$G^1{}_0 = 0.$$
$$G^1{}_1 = \frac{2\dot{c}(t)\dot{R}(t)R(t) - 2\ddot{R}(t)R(t)c(t) - \dot{R}(t)^2c(t) - \kappa c(t)^3}{R(t)^2c(t)^3}.$$
$$G^1{}_2 = 0.$$
$$G^1{}_3 = 0.$$
$$G^2{}_0 = 0.$$
$$G^2{}_1 = 0.$$
$$G^2{}_2 = \frac{2\dot{c}(t)\dot{R}(t)R(t) - 2\ddot{R}(t)R(t)c(t) - \dot{R}(t)^2c(t) - \kappa c(t)^3}{R(t)^2c(t)^3}.$$
$$G^2{}_3 = 0.$$
$$G^3{}_0 = 0.$$
$$G^3{}_1 = 0.$$
$$G^3{}_2 = 0.$$
$$G^3{}_3 = \frac{2\dot{c}(t)\dot{R}(t)R(t) - 2\ddot{R}(t)R(t)c(t) - \dot{R}(t)^2c(t) - \kappa c(t)^3}{R(t)^2c(t)^3}.$$

$\boxed{G}$

$$G = -6\frac{\ddot{R}(t)}{R(t)c(t)^2} - 6\frac{\dot{R}(t)^2}{R(t)^2c(t)^2} + 6\frac{\dot{c}(t)\dot{R}(t)}{R(t)c(t)^3} - 6\frac{\kappa}{R(t)^2}.$$

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

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

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

$$g^{\mu\nu}\,\Gamma^0_{\mu\nu} = 4\frac{x^2\dot{R}(t)R(t)^3\kappa}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2c(t)^2} - 2\frac{\dot{c}(t)z^2\kappa c(t)}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 2\frac{y^4\dot{R}(t)R(t)^3\kappa^2}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2c(t)^2} + 4\frac{z^2\dot{R}(t)R(t)^3\kappa}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2c(t)^2} - 4\frac{z^2x^2\dot{R}(t)R(t)^3\kappa^2}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2c(t)^2} + 2\frac{\dot{c}(t)z^2x^2\kappa^2c(t)}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} + \frac{\dot{c}(t)y^4\kappa^2c(t)}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 2\frac{\dot{c}(t)x^2\kappa c(t)}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} + \frac{\dot{c}(t)z^4\kappa^2c(t)}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 4\frac{y^2x^2\dot{R}(t)R(t)^3\kappa^2}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2c(t)^2} + 2\frac{\dot{c}(t)y^2x^2\kappa^2c(t)}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} + 4\frac{y^2\dot{R}(t)R(t)^3\kappa}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2c(t)^2} - 2\frac{z^4\dot{R}(t)R(t)^3\kappa^2}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2c(t)^2} + \frac{\dot{c}(t)c(t)}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 4\frac{z^2y^2\dot{R}(t)R(t)^3\kappa^2}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2c(t)^2} + 2\frac{\dot{c}(t)z^2y^2\kappa^2c(t)}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 2\frac{\dot{c}(t)y^2\kappa c(t)}{(-1 + z^2\kappa + x^2\kappa}$$
$$g^{\mu\nu}\,\Gamma^1_{\mu\nu} = 4\frac{z^2xR(t)^2\kappa^2}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 4\frac{z^2y^2xR(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} + 4\frac{x^3R(t)^2\kappa^2}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 3\frac{xR(t)^2\kappa}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 2\frac{y^4xR(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 4\frac{z^2x^3R(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 4\frac{y^2x^3R(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 2\frac{z^4xR(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 2\frac{x^5R(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} + 4\frac{y^2xR(t)^2\kappa^2}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2}.$$
$$g^{\mu\nu}\,\Gamma^2_{\mu\nu} = -2\frac{y^5R(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 2\frac{z^4yR(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 4\frac{y^3x^2R(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 4\frac{z^2yx^2R(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} + 4\frac{z^2yR(t)^2\kappa^2}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} + 4\frac{yx^2R(t)^2\kappa^2}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 3\frac{yR(t)^2\kappa}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} + 4\frac{y^3R(t)^2\kappa^2}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 4\frac{z^2y^3R(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 2\frac{yx^4R(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2}.$$
$$g^{\mu\nu}\,\Gamma^3_{\mu\nu} = -4\frac{z^3y^2R(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 2\frac{zx^4R(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} + 4\frac{z^3R(t)^2\kappa^2}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 3\frac{zR(t)^2\kappa}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} + 4\frac{zx^2R(t)^2\kappa^2}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 4\frac{z^3x^2R(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 2\frac{zy^4R(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 4\frac{zy^2x^2R(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} + 4\frac{zy^2R(t)^2\kappa^2}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2} - 2\frac{z^5R(t)^2\kappa^3}{\left(-1 + z^2\kappa + x^2\kappa + y^2\kappa\right)^2}.$$