Robertson-Walker Metric in proper distance:

$\boxed{x^\mu}$

$x^0 = t.$

$x^1 = p.$

$x^2 = \theta.$

$x^3 = \phi.$

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

$g_{00} = -\frac{\dot{H}(t)^2 p^2 - H(t)^2}{H(t)^2}.$

$g_{01} = \frac{\dot{H}(t) p}{H(t)}.$

$g_{02} = 0.$

$g_{03} = 0.$

$g_{10} = \frac{\dot{H}(t) p}{H(t)}.$

$g_{11} = -1.$

$g_{12} = 0.$

$g_{13} = 0.$

$g_{20} = 0.$

$g_{21} = 0.$

$g_{22} = -p^2.$

$g_{23} = 0.$

$g_{30} = 0.$

$g_{31} = 0.$

$g_{32} = 0.$

$g_{33} = -p^2 \sin(\theta)^2.$

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

$\sqrt{} = \sqrt{p^4 \sin(\theta)^2}.$

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

$g^{00} = 1.$

$g^{01} = \frac{\dot{H}(t) p}{H(t)}.$

$g^{02} = 0.$

$g^{03} = 0.$

$g^{10} = \frac{\dot{H}(t) p}{H(t)}.$

$g^{11} = \frac{\dot{H}(t)^2 p^2 - H(t)^2}{H(t)^2}.$

$g^{12} = 0.$

$g^{13} = 0.$

$g^{20} = 0.$

$g^{21} = 0.$

$g^{22} = -\frac{1}{p^2}.$

$g^{23} = 0.$

$g^{30} = 0.$

$g^{31} = 0.$

$g^{32} = 0.$

$g^{33} = -\frac{1}{p^2 \sin(\theta)^2}.$

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

$\Gamma^0_{00} = \frac{\dot{H}(t)^3 p^2}{H(t)^3}.$

$\Gamma^0_{01} = -\frac{\dot{H}(t)^2 p}{H(t)^2}.$

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

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

$\Gamma^0_{10} = -\frac{\dot{H}(t)^2 p}{H(t)^2}.$

$\Gamma^0_{11} = \frac{\dot{H}(t)}{H(t)}.$

$\Gamma^0_{12} = 0.$

$\Gamma^0_{13} = 0.$

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

$\Gamma^0_{21} = 0.$

$\Gamma^0_{22} = \frac{\dot{H}(t) p^2}{H(t)}.$

$\Gamma^0_{23} = 0.$

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

$\Gamma^0_{31} = 0.$

$\Gamma^0_{32} = 0.$

$\Gamma^0_{33} = \frac{\dot{H}(t) p^2 \sin(\theta)^2}{H(t)}.$

$\Gamma^1_{00} = -\frac{p H(t)^3 \ddot{H}(t) - \dot{H}(t)^4 p^3}{H(t)^4}.$

$\Gamma^1_{01} = -\frac{\dot{H}(t)^3 p^2}{H(t)^3}.$

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

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

$\Gamma^1_{10} = -\frac{\dot{H}(t)^3 p^2}{H(t)^3}.$

$\Gamma^1_{11} = \frac{\dot{H}(t)^2 p}{H(t)^2}.$

$\Gamma^1_{12} = 0.$

$\Gamma^1_{13} = 0.$

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

$\Gamma^1_{21} = 0.$

$\Gamma^1_{22} = \frac{p(\dot{H}(t)^2 p^2 - H(t)^2)}{H(t)^2}.$

$\Gamma^1_{23} = 0.$

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

$\Gamma^1_{31} = 0.$

$\Gamma^1_{32} = 0.$

$\Gamma^1_{33} = \frac{p(\dot{H}(t)^2 p^2 - H(t)^2) \sin(\theta)^2}{H(t)^2}.$

$\Gamma^2_{00} = 0.$
$\Gamma^2_{01} = 0.$
$\Gamma^2_{02} = 0.$
$\Gamma^2_{03} = 0.$
$\Gamma^2_{10} = 0.$
$\Gamma^2_{11} = 0.$
$\Gamma^2_{12} = \frac{1}{p}.$
$\Gamma^2_{13} = 0.$
$\Gamma^2_{20} = 0.$
$\Gamma^2_{21} = \frac{1}{p}.$
$\Gamma^2_{22} = 0.$
$\Gamma^2_{23} = 0.$
$\Gamma^2_{30} = 0.$
$\Gamma^2_{31} = 0.$
$\Gamma^2_{32} = 0.$
$\Gamma^2_{33} = -\cos(\theta)\sin(\theta).$

$\Gamma^3_{00} = 0.$
$\Gamma^3_{01} = 0.$
$\Gamma^3_{02} = 0.$
$\Gamma^3_{03} = 0.$
$\Gamma^3_{10} = 0.$
$\Gamma^3_{11} = 0.$
$\Gamma^3_{12} = 0.$
$\Gamma^3_{13} = \frac{1}{p}.$
$\Gamma^3_{20} = 0.$
$\Gamma^3_{21} = 0.$
$\Gamma^3_{22} = 0.$
$\Gamma^3_{23} = \frac{\cos(\theta)}{\sin(\theta)}.$
$\Gamma^3_{30} = 0.$
$\Gamma^3_{31} = \frac{1}{p}.$
$\Gamma^3_{32} = \frac{\cos(\theta)}{\sin(\theta)}.$
$\Gamma^3_{33} = 0.$

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

$R_{00} = -\frac{2\dot{H}(t)^4p^2 - 3H(t)^3\ddot{H}(t) + \dot{H}(t)^2p^2H(t)\ddot{H}(t)}{H(t)^4}.$
$R_{01} = \frac{2\dot{H}(t)^3p + \dot{H}(t)pH(t)\ddot{H}(t)}{H(t)^3}.$
$R_{02} = 0.$
$R_{03} = 0.$
$R_{10} = \frac{2\dot{H}(t)^3p + \dot{H}(t)pH(t)\ddot{H}(t)}{H(t)^3}.$
$R_{11} = -\frac{H(t)\ddot{H}(t) + 2\dot{H}(t)^2}{H(t)^2}.$
$R_{12} = 0.$
$R_{13} = 0.$
$R_{20} = 0.$
$R_{21} = 0.$
$R_{22} = -\frac{2\dot{H}(t)^2p^2 + p^2H(t)\ddot{H}(t)}{H(t)^2}.$
$R_{23} = 0.$
$R_{30} = 0.$
$R_{31} = 0.$
$R_{32} = 0.$
$R_{33} = -\frac{p^2H(t)\ddot{H}(t)\sin(\theta)^2 + 2\dot{H}(t)^2p^2\sin(\theta)^2}{H(t)^2}.$

$\boxed{R^\mu_{\ \nu}}$

$R^0_{\ 0} = 3\frac{\ddot{H}(t)}{H(t)}.$
$R^0_{\ 1} = 0.$
$R^0_{\ 2} = 0.$
$R^0_{\ 3} = 0.$
$R^1_{\ 0} = -2\frac{\dot{H}(t)^3p}{H(t)^3} + 2\frac{\dot{H}(t)p\ddot{H}(t)}{H(t)^2}.$
$R^1_{\ 1} = 2\frac{\dot{H}(t)^2}{H(t)^2} + \frac{\ddot{H}(t)}{H(t)}.$
$R^1_{\ 2} = 0.$
$R^1_{\ 3} = 0.$
$R^2_{\ 0} = 0.$
$R^2_{\ 1} = 0.$
$R^2_{\ 2} = 2\frac{\dot{H}(t)^2}{H(t)^2} + \frac{\ddot{H}(t)}{H(t)}.$
$R^2_{\ 3} = 0.$
$R^3_{\ 0} = 0.$
$R^3_{\ 1} = 0.$
$R^3_{\ 2} = 0.$
$R^3_{\ 3} = 2\frac{\dot{H}(t)^2}{H(t)^2} + \frac{\ddot{H}(t)}{H(t)}.$

$\boxed{R}$

$R = 6\frac{\dot{H}(t)^2}{H(t)^2} + 6\frac{\ddot{H}(t)}{H(t)}.$

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

$G^{0}_{0} = -3\frac{\dot{H}(t)^2}{H(t)^2}.$

$G^{0}_{1} = 0.$

$G^{0}_{2} = 0.$

$G^{0}_{3} = 0.$

$G^{1}_{0} = -2\frac{\dot{H}(t)^3 p}{H(t)^3} + 2\frac{\dot{H}(t) p \dot{H}(t)}{H(t)^2}.$

$G^{1}_{1} = -\frac{\dot{H}(t)^2}{H(t)^2} - 2\frac{\ddot{H}(t)}{H(t)}.$

$G^{1}_{2} = 0.$

$G^{1}_{3} = 0.$

$G^{2}_{0} = 0.$

$G^{2}_{1} = 0.$

$G^{2}_{2} = -\frac{\dot{H}(t)^2}{H(t)^2} - 2\frac{\ddot{H}(t)}{H(t)}.$

$G^{2}_{3} = 0.$

$G^{3}_{0} = 0.$

$G^{3}_{1} = 0.$

$G^{3}_{2} = 0.$

$G^{3}_{3} = -\frac{\dot{H}(t)^2}{H(t)^2} - 2\frac{\ddot{H}(t)}{H(t)}.$

$\boxed{G}$

$G = -6\frac{\dot{H}(t)^2}{H(t)^2} - 6\frac{\ddot{H}(t)}{H(t)}.$

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

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

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

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

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

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

$g^{\mu\nu}\,\Gamma^{0}_{\mu\nu} = -\frac{\dot{H}(t)^5 p^4}{H(t)^5} - \frac{\dot{H}(t) p^4}{H(t)} - \frac{\dot{H}(t)^3 p^2}{H(t)^3} - \frac{\dot{H}(t)}{H(t)} - \frac{\dot{H}(t) p^4 \sin(\theta)^4}{H(t)}.$

$g^{\mu\nu}\,\Gamma^{1}_{\mu\nu} = -\frac{p\dot{H}(t)}{H(t)} - \frac{\dot{H}(t)^2 p}{H(t)^2} - \frac{\dot{H}(t)^2 p^5}{H(t)^2} + p^3 \sin(\theta)^4 + \frac{\dot{H}(t)^2 p^3 \dot{H}(t)}{H(t)^3} + p^3 - \frac{\dot{H}(t)^2 p^5 \sin(\theta)^4}{H(t)^2} - \frac{\dot{H}(t)^4 p^3}{H(t)^4} - \frac{\dot{H}(t)^6 p^5}{H(t)^6}.$

$g^{\mu\nu}\,\Gamma^{2}_{\mu\nu} = p^2 \cos(\theta) \sin(\theta)^3.$

$g^{\mu\nu}\,\Gamma^{3}_{\mu\nu} = 0.$