Part Used in $R^{0}{}_{101}$

$$'R^{0}{}_{101} = e^{2(\beta-\alpha)}\left(\partial_0^2\beta + (\partial_0\beta)^2 - \partial_0\alpha\,\partial_0\beta\right) + \partial_1\alpha\,\partial_1\beta - \partial_1(\partial_1\alpha) - (\partial_1\alpha)^2 \quad -(1)$$

Then use:

$$e^{2\alpha}\left(2r\partial_1\alpha + 1\right) = 1, \quad -(2)$$

$$\boxed{e^{2\alpha} = 1 + \frac{\mu}{r} = 1 - x} \quad -(3)$$

$$\alpha = -\beta, \quad -(4)$$

$$\partial_0\alpha = -\partial_0\beta = 0. \quad -(5)$$

We know that eq. (1) is right. Using eq. (5), and eq. (6):

$$R^{0}{}_{101} = -\partial_1\alpha\,\partial_1\alpha - \partial_1(\partial_1\alpha) - (\partial_1\alpha)^2$$

$$\boxed{R^{0}{}_{101} = -2(\partial_1\alpha)^2 - \partial_1(\partial_1\alpha)} \quad -(6)$$

First Check

Does Maxima produce eq. (6)?

From eq. (2):

$$2r\partial_1\alpha + 1 = e^{-2\alpha} = \frac{1}{1-x} \quad -(7)$$

$$\partial_1\alpha = \frac{1}{2r}\left(\frac{1}{1-x} - 1\right)$$

$$\boxed{\partial_1\alpha = \frac{x}{2r(1-x)}} \quad -(8)$$

2)

From eqs. (6) and (8):

$$R^0{}_{101} = -\frac{2x^2}{4r^2(1-x)^2} - \partial_1(\partial_1\alpha).$$

$$\boxed{R^0{}_{101} = \frac{-x^2}{2r^2(1-x)^2} - \partial_1(\partial_1\alpha)} \quad -(9)$$

Using ~~the~~ Leibnitz Theorem:

$$\partial_1(\partial_1\alpha) = \frac{\partial}{\partial r}\left(\frac{1}{2r}\left(e^{-2\alpha}-1\right)\right) \quad -(10)$$

$$\boxed{\partial_1(\partial_1\alpha) = -\frac{1}{2r^2}\left(e^{-2\alpha}-1\right) - \frac{1}{r}(\partial_1\alpha)e^{-2\alpha}} \quad -(11)$$

Third Check

Does Maxima agree with eq. (11)?

In eq. (11), use eqs. (8) and eq. (3):

$$\partial_1(\partial_1\alpha) = -\frac{1}{2r^2}\left(\frac{1}{1-x}-1\right) - \frac{1}{2r^2}\frac{x}{(1-x)^2}$$

$$\boxed{\partial_1(\partial_1\alpha) = -\frac{1}{2r^2}\frac{x}{1-x} - \frac{x}{2r^2(1-x)^2}} \quad -(12)$$

Does Maxima agree with this?