Relativity - Report 3

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(1) If we put $\theta = \pi/2$, the quantity Σ becomes r^2 and the line element is obtained as

$$\mathrm{d}s^2 = -c^2\left(1 - \frac{2\mu}{r}\right)\mathrm{d}t^2 - \frac{4\mu ac}{r}\mathrm{d}t\mathrm{d}\varphi + \frac{r^2}{\Delta}\mathrm{d}r^2 + r^2\mathrm{d}\theta^2 + \left(r^2 + a^2 + \frac{2\mu a^2}{r}\sin^2\theta\mathrm{d}\varphi^2\right) \quad (0.1)$$

References

[1] R. M. Wald, *General Relativity*, University of Chicago Press, Chicago (1984).