

Metric

$$ds^2 = -dt^2 + (1 - f(r, t)) dr^2 + r^2 d\theta^2 + r^2 \sin^2 \theta d\phi^2$$

Curvature Invariants

$$R = \frac{r^2 f(r, t) \frac{\partial^2}{\partial t^2} f(r, t) - \frac{r^2 \left(\frac{\partial}{\partial t} f(r, t) \right)^2}{2} - r^2 \frac{\partial^2}{\partial t^2} f(r, t) - 2r \frac{\partial}{\partial r} f(r, t) + 2f^2(r, t) - 2f(r, t)}{r^2 (f^2(r, t) - 2f(r, t) + 1)}$$

Stress–Energy Tensor

$$T_{\mu\nu} = \begin{pmatrix} \frac{2r(f(r,t)-1)^3 \frac{\partial^2}{\partial t^2} f(r,t) + r(f(r,t)-1)^2 \left(\frac{\partial}{\partial t} f(r,t) \right)^2 - 2r(f(r,t)-1) \frac{\partial^2}{\partial t^2} f(r,t) - r \left(\frac{\partial}{\partial t} f(r,t) \right)^2 + 4(f(r,t)-1)^3 \left(-2f(r,t) - \frac{\partial}{\partial r} f(r,t) \right)}{64\pi r (f(r,t)-1)^4} & & & \\ -\frac{\frac{\partial}{\partial t} f(r,t)}{16\pi r (f(r,t)-1)} & & & \\ 0 & & & \\ 0 & & & \end{pmatrix}$$