Erratum

May 9, 2024

In the peer review process a typo was noticed in our expression for the rotating metric function $p(r)$ (eq. 3.7/3.8) which which propagated through the remainder of the paper in a minor way. The main conclusions of the paper are unchanged, but all of the numerics have been carefully redone and all plots regenerated. The following covers all figures and expressions that change as a result:

1 Equations

Equation 3.8 should read:

$$p(r) = \frac{2\Lambda}{3}\left(\frac{\sqrt{1+\frac{4\alpha\Lambda}{3}}}{1+\sqrt{1+\frac{4\alpha\Lambda}{3}}}\right) + \frac{1}{2\alpha}\left[1 - \sqrt{1+\frac{4\alpha\Lambda}{3}}\sqrt{1+\frac{4\alpha}{3}\left(\Lambda+\frac{6M}{r^3}\right)}\right] \tag{1}$$

and (3.15) should read

$$\bar{p}(\bar{r}) = \pm\frac{2\sqrt{1\pm 4\bar{\alpha}}}{1+\sqrt{1\pm 4\bar{\alpha}}} + \frac{1}{2\bar{\alpha}}\left(1 - \sqrt{1\pm 4\bar{\alpha}}\sqrt{1\pm 4\bar{\alpha} + \frac{8\bar{\alpha}\bar{M}}{\bar{r}^3}}\right). \tag{2}$$

(3.26) should read:

$$\frac{\bar{\Omega}_{GR}}{\bar{\chi}} = \frac{\bar{M}\bar{r}_{h(\mathrm{GR})}}{2\bar{M} - \bar{r}_{h(\mathrm{GR})}} \tag{3}$$

and (3.27) should read:

$$\frac{\bar{\Omega}_{GB}}{\bar{\chi}} = \frac{\bar{\Omega}_{GR}}{\bar{\chi}} + \frac{1 - 2\left(\bar{r}^3_{h(\mathrm{GB})} + \bar{r}_{h(\mathrm{GB})}\right)^2}{2\bar{r}^3_{h(\mathrm{GB})}}\bar{\alpha} + \mathcal{O}\left(\bar{\alpha}^2\right) \tag{4}$$

corresponding to a crossover radius of

$$\bar{r}_{h(\mathrm{GB})} = 0.545121 \tag{5}$$

and thus a crossover mass of

$$\bar{M}_{\rm x}^{\bar{\Omega}} \approx 0.353553 + 0.917228\bar{\alpha} \tag{6}$$

to leading order in $\bar{\alpha}$.

Equations (3.67-3.70) are replaced by the following condition:

$$\begin{aligned}\Omega_{4DEGB} &= \Omega_{GR} \\ &+ \frac{\left(27\bar{M}^2\left(729\bar{M}^4 + 864\bar{M}^2 - 28\right) - 32\right)\chi}{\bar{M}^2\sqrt{81\bar{M}^2+3}\left(\sqrt{3}\left(27\bar{M}^2-2\right)\chi + 9\sqrt{27\bar{M}^2+1}\right)^2}\bar{\alpha} \\ &+ \mathcal{O}(\bar{\alpha}^2).\end{aligned} \tag{7}$$

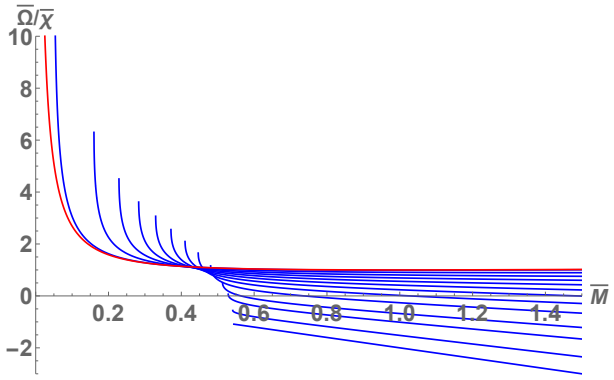
corresponding to a crossover mass of $\bar{M} = 0.234239$.

Equations (3.71-3.72) should be replaced with the condition:

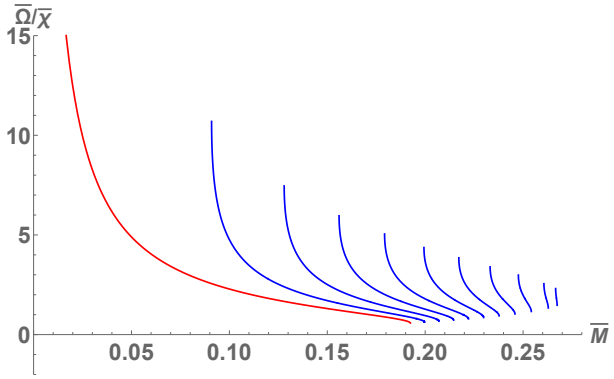
$$\begin{aligned}\Omega_{4DEGB} &= \Omega_{GR}^{num} \\ &+ \frac{\left(27\bar{M}^2\left(-729\bar{M}^4 + 864\bar{M}^2 + 28\right) - 32\right)\chi}{3\bar{M}^2\sqrt{3-81\bar{M}^2}\left(\left(27\bar{M}^2+2\right)\chi - 3\sqrt{3-81\bar{M}^2}\right)^2}\bar{\alpha} \\ &+ \mathcal{O}(\bar{\alpha}^2)\end{aligned} \tag{8}$$

corresponding to an asymptotic mass of $\bar{M} = 0.156121$.

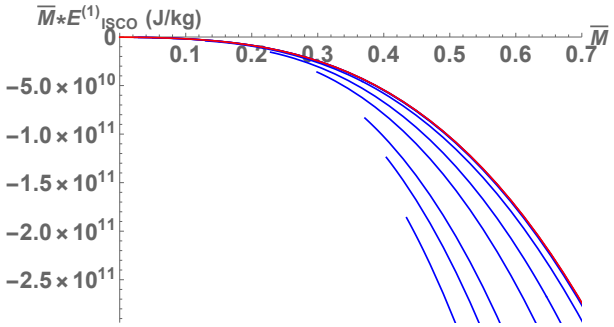
2 Figures



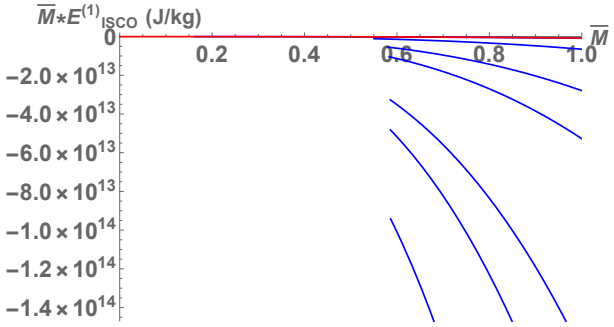
To replace Fig 3.2b.



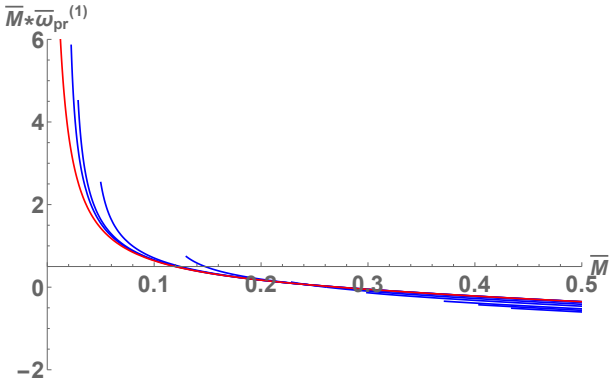
To replace Fig 3.3b.



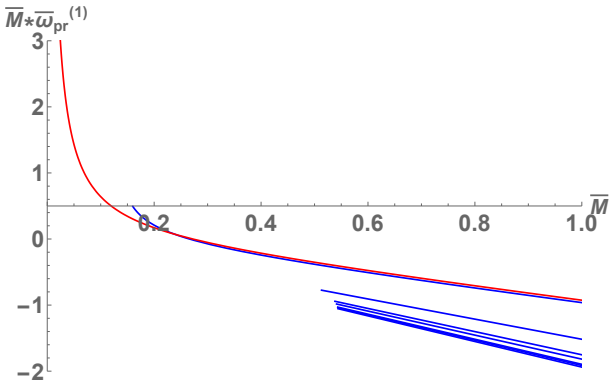
To replace Fig 3.5f.



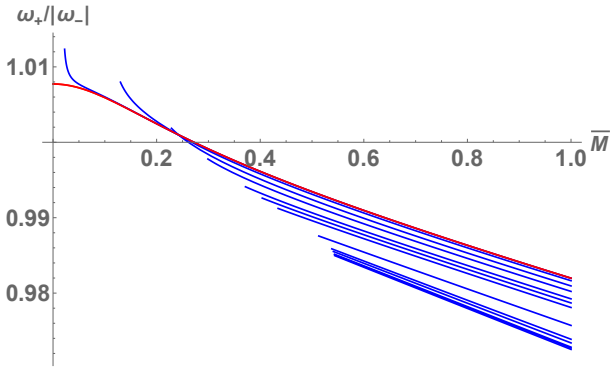
To replace Fig 3.6f.



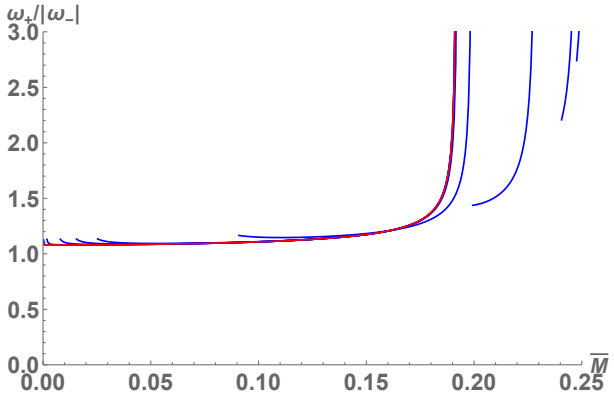
To replace Fig 3.12d.



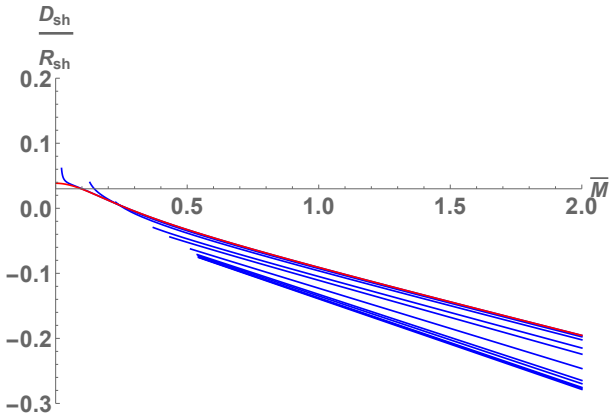
To replace Fig 3.13d.



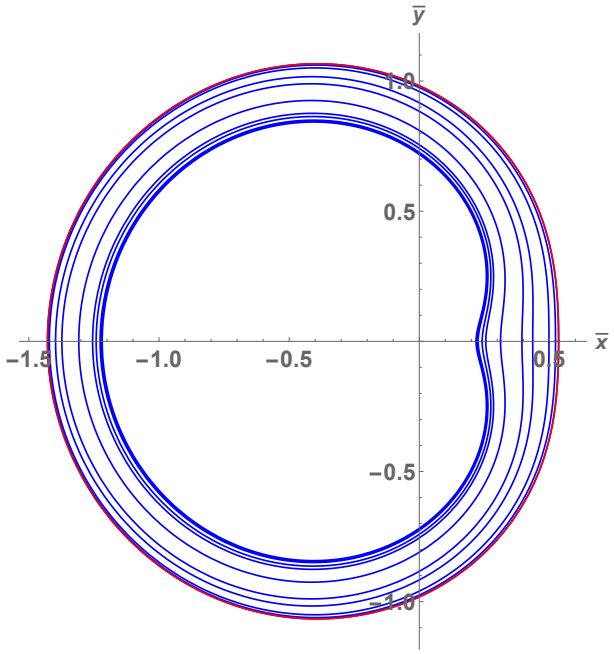
To replace Fig 3.14.



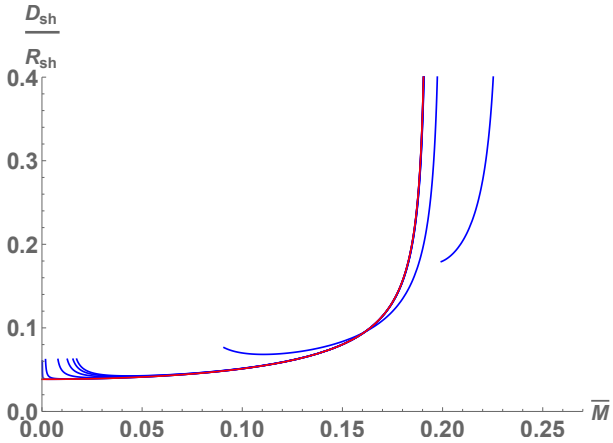
To replace Fig 3.18.



To replace Fig 3.23b.



To replace Fig 3.24.



To replace Fig 3.25b.