Eur. Phys. J. Plus (2019) **134**: 369
DOI 10.1140/epjp/i2019-12901-x

THE EUROPEAN PHYSICAL JOURNAL Plus

Erratum

Erratum to: A new anisotropic solution by MGD gravitational decoupling

Rafael Pérez Graterol[a]

Departamento de Física, Universidad Simón Bolívar Caracas, Venezuela

Original article: Eur. Phys. J. Plus (2018) **133**: 244, https://doi.org/10.1140/epjp/i2018-12074-2

Received: 25 June 2019
Published online: 31 July 2019

After publication, the author noticed that some equations needed to be corrected and that two references were missing.

In sect. 1, *Introduction*, a reference should be added and the text after eq. (2) should be amended as follows:

"What is remarkable about the MGD decoupling is that one isotropic solution is deformed and it produces a new solution that preserves spherical symmetry. Therefore, we could choose isotropic well-behaved and spherically symmetric solutions and then research whether the new solution is still well-behaved [M. Estrada, F. Tello-Ortiz, arXiv:1803.02344v1 [gr-qc]]."

In sect. 1, *Introduction*, a reference should be added and the text in the fifth paragraph should be amended as follows:

"According to Ovalle [J. Ovalle *et al.*, Eur. Phys. J. C **78**, 122 (2018)], MGD decoupling does not only give physically acceptable interior solutions for different isotropic perfect fluids in GR, but it also could be applied in a large number of relevant cases...".

Moreover, some equations needed to be amended. Their corrected version is the following:

$$e^{-\lambda(r)} = (1-\beta)\mu(r) + \beta\left(\frac{\sqrt{(1+Cr^2)(2-Cr^2)}(1+Cr^2) + B(2-Cr^2)(5+2Cr^2)}{\sqrt{(1+Cr^2)(2-Cr^2)}(1+7Cr^2) + B\left[(2-Cr^2)(5+2Cr^2)+6Cr^2(1-2Cr^2)\right]}\right). \tag{39}$$

$$(1-\beta)\mu(R) + \beta\left(\frac{\sqrt{(1+CR^2)(2-CR^2)}(1+CR^2) + B(2-CR^2)(5+2CR^2)}{\sqrt{(1+CR^2)(2-CR^2)}(1+7CR^2) + B\left[(2-CR^2)(5+2CR^2)+6CR^2(1-2CR^2)\right]}\right) = 1 - \frac{2\mathcal{M}_{\mathcal{S}}}{R}. \tag{41}$$

$$\frac{2\mathcal{M}_{\mathcal{S}}}{R} = \frac{2M_0}{R} + \beta\left(1-\frac{2M_0}{R}\right) - \beta\left(\frac{\sqrt{(1+CR^2)(2-CR^2)}(1+CR^2) + B(2-CR^2)(5+2CR^2)}{\sqrt{(1+CR^2)(2-CR^2)}(1+7CR^2) + B\left[(2-CR^2)(5+2CR^2)+6CR^2(1-2CR^2)\right]}\right). \tag{45}$$

$$A\left[(1+CR^2)^{3/2} + B\sqrt{2-CR^2}\left(5+2CR^2\right)\right]^2 = (1-\beta)\left(1-\frac{2M_0}{R}\right) + \beta\left(\frac{\sqrt{(1+CR^2)(2-CR^2)}(1+CR^2) + B(2-CR^2)(5+2CR^2)}{\sqrt{(1+CR^2)(2-CR^2)}(1+7CR^2) + B\left[(2-CR^2)(5+2CR^2)+6CR^2(1-2CR^2)\right]}\right). \tag{46}$$

Finally, in the first paragraph of the *Conclusions*:

"In particular, it was shown that the source $\Phi_{\mu\nu}$ always reduces the effective radial pressure $\tilde{p}_r$ inside the self-gravitating system".

[a] e-mail: raf.jperezg@gmail.com