Erratum: Relativistic parameterizations of neutron matter and implications for neutron stars [Phys. Rev. C **98**, 065804 (2018)]

Nadine Hornick, Laura Tolos, Andreas Zacchi , Jan-Erik Christian, and Jürgen Schaffner-Bielich

(Received 23 November 2020; published 23 March 2021)

DOI: [10.1103/PhysRevC.103.039902](https://doi.org/10.1103/PhysRevC.103.039902)

We discovered an error in our code for calculating the tidal deformability. The other results of the paper are unaffected by this error. Only Table I needs to be corrected for the numerical values of the tidal deformability. It now reads:

TABLE I. Central energy density, central pressure, radius, and dimensionless tidal deformability of a $1.4M_{\odot}$ neutron star for different values of m^*/m and for a slope parameter of $L = 60$ MeV and a symmetry energy of $J = 32$ MeV.

m^*/m	$\epsilon_c(1.4 M_{\odot}) [\frac{\text{MeV}}{\text{fm}^3}]$	$p_c(1.4 M_{\odot}) [\frac{\text{MeV}}{\text{fm}^3}]$	$R_{1.4 M_{\odot}} (\text{km})$	$\Lambda_{1.4 M_{\odot}}$	$\epsilon_c(2 M_{\odot}) [\frac{\text{MeV}}{\text{fm}^3}]$	$p_c(2 M_{\odot}) [\frac{\text{MeV}}{\text{fm}^3}]$	$M_{\text{max}} (M_{\odot})$
0.55	268	32.2	13.9	960	329	64.2	2.90
0.60	302	37.0	13.5	811	381	79.0	2.72
0.65	344	44.4	13.2	666	462	104	2.53
0.70	397	53.4	12.8	535	590	150	2.32
0.75	466	65.7	12.4	422	856	261	2.11

This changes our conclusion slightly. Now the cases of $m^*/m \geq 0.65$ are within the 90% confidence level of the limit of $\Lambda < 720$ from GW170817 [1] instead of $m^*/m > 0.65$.

We took this opportunity to change the crust equation of state (EoS) to the Baym, Pethick, and Sutherland [2] and Negele and Vautherin [3] equation of state in order to improve matching. However, we note that the effects of a crust EoS on the tidal deformability are known to be less than 11% [4].

We thank D. Chatterjee for pointing out the error in our code.

[1] B. P. Abbott *et al.* (LIGO Scientific Collaboration and Virgo Collaboration), *Phys. Rev. Lett.* **119**, 161101 (2017).

[2] G. Baym, C. Pethick, and P. Sutherland, *Astrophys. J.* **170**, 299 (1971).

[3] J. W. Negele and D. Vautherin, *Nucl. Phys. A* **207**, 298 (1973).

[4] A. M. Kalaitzis, T. F. Motta, and A. W. Thomas, *Int. J. Mod. Phys. E* **28**, 1950081 (2019).