

Erratum: Strange stars admixed with dark matter: Equiparticle model in a two fluid approach [Phys. Rev. D **111**, 063076 (2025)]

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In this Erratum, we correct the stability analysis of the two fluid formalism. The derivatives of $N_{\text{vis,DM}}$ with respect to $\mathcal{E}^c$ in one sector are now computed by considering $\mathcal{E}^c$ of the other sector as a fixed quantity, as should have been done initially. To make the notation clearer, we rewrite Eq. (29) as

$$\begin{bmatrix} \delta N_{\text{vis}} \\ \delta N_{\text{DM}} \end{bmatrix} = \begin{bmatrix} (\partial N_{\text{vis}} / \partial \mathcal{E}_{\text{vis}}^c)_{\mathcal{E}_{\text{DM}}^c} & (\partial N_{\text{vis}} / \partial \mathcal{E}_{\text{DM}}^c)_{\mathcal{E}_{\text{vis}}^c} \\ (\partial N_{\text{DM}} / \partial \mathcal{E}_{\text{vis}}^c)_{\mathcal{E}_{\text{DM}}^c} & (\partial N_{\text{DM}} / \partial \mathcal{E}_{\text{DM}}^c)_{\mathcal{E}_{\text{vis}}^c} \end{bmatrix} \begin{bmatrix} \delta \mathcal{E}_{\text{vis}}^c \\ \delta \mathcal{E}_{\text{DM}}^c \end{bmatrix} = 0, \quad (29)$$

in which the corresponding central energy density that is held fixed is explicitly indicated in the partial derivatives. The corrected analysis indicates that all mass-radius curves, shown up to the maximum mass point, correspond to stable strange stars. Therefore, Fig. 4 displayed below replaces the original one from the paper.

Notice that the curves are exactly the same as the previous ones, except for the removal of the solid circles. Furthermore, the relationship between the maximum mass M_{max} and the fraction F_{DM} is shown in new Fig. 5, replacing the original one presented in the paper. The slopes of the linear fits obtained are -0.0343 for the bosonic model and -0.0315 for the fermionic one. Both values are still very close to -0.0362 , the number found in Ref. [7]. All other results and discussions in the original paper remain unchanged.

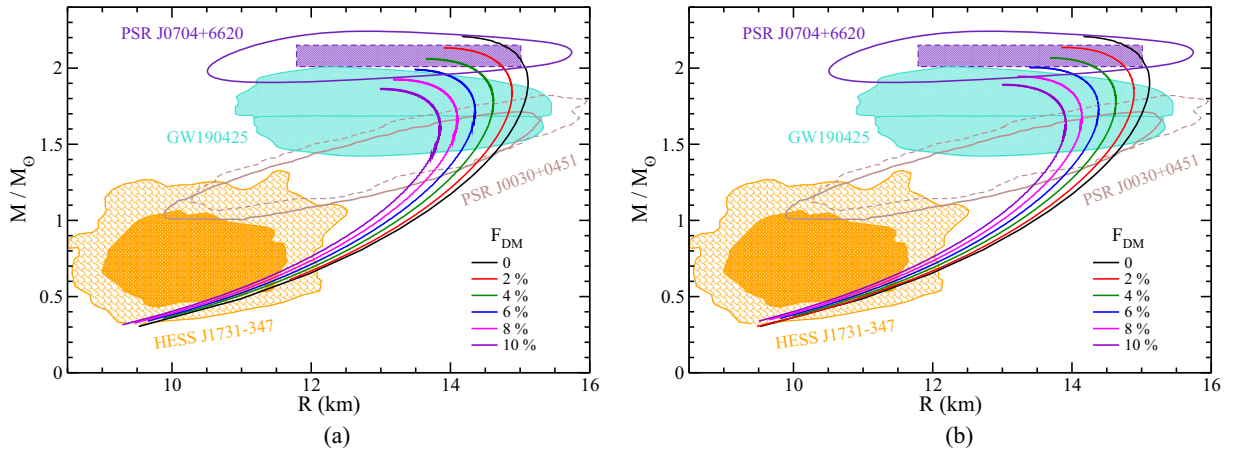


FIG. 4. Mass-radius relations for different fractions of dark matter in each strange stars. Results for (a) bosonic and (b) fermionic cases. Also plotted are data related to the NICER mission concerning the pulsars PSR J0030 + 0451 (dashed [1] and solid [2] brown contours) and PSR J0740 + 6620 (solid indigo contour [3] and rectangular indigo band [4]). We also compared our results with data from the GW190425 event [5] (turquoise contours) and the compact object named HESS J1731-347 [6] (orange contours).

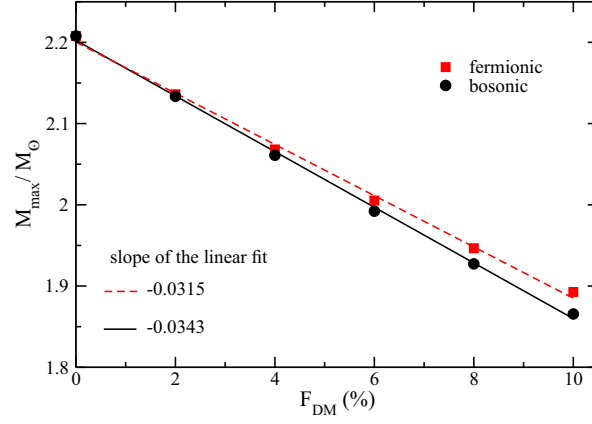


FIG. 5. Maximum mass versus mass fraction for the strange-DM stars presented in Fig. 4.

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