Correction to: A Core-Envelope Massive Distribution with a Parabolic Density Distribution in the Core

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The study carried out by Negi et al. [1] deals with the construction of a core-envelope model of static and spherical mass distribution characterized by exact solutions of Einstein's field equations. The core of the model is described by Tolman's VII solution [2] matched smoothly at the core-envelope boundary. The region of the envelope is described by Tolman's V solution [2] which is finally matched to the vacuum Schwarzschild solution. The core-envelope boundary of the model is assured by matching of all the four variables—pressure (P), energy density (E) and both of the metric parameters ν and λ with recourse to the computational method. However, it appears that while computing the core-envelope boundary and other parameters by using Eqs. (19)–(22) and thereafter following the expression for w_b , some error occurred in the computation of Negi et al. [1] which has affected the results of this paper significantly. I have found that this matching can be ensured for the values of n in the range $0 < n \leq (3/4)$ and that the matching does not exist for the values of $n > (3/4)$. The last claim is not in agreement with the claim made in the study of Negi et al. [1] that the matching also exists for the value of $n = 1$ [$u = (1/3)$]. I have carried out this matching for the values of $n = (1/2)$ and $n = (3/4)$ [that is for u values = 0.25 and 0.30, respectively], and the results of this study will be presented in a separate paper. The matching for other allowed values of n in the range prescribed above can also be done likewise.

Deceased: A. K. Pande and M. C. Durgapal.

The original article can be found online at <https://doi.org/10.1007/BF00764153>.

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References

1. Negi, P.S., Pande, A.K., Durgapal, M.C.: Gen. Relativ. Gravit. **22**, 735 (1990)
2. Tolman, R.C.: Phys. Rev. **55**, 364 (1939)

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