

Erratum: Imprints of extra dimensions in eccentric extreme mass-ratio inspiral gravitational waveforms [Phys. Rev. D **112**, 024039 (2025)]

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We would like to provide a clarification regarding the perturbation equation (3.3) in the paper. While it is indeed true, as mentioned in the paper, that in the low-energy regime, where the matter-energy density on the brane is considered negligible compared to the brane tension, one can neglect the contribution from the variation of the projected Weyl tensor, the background spacetime mentioned in (2.2) is a *non-Ricci-flat* Petrov Type-D one. Hence, to get a *Teukolsky-like* equation (3.3) where the tidal charge enters into the perturbation equation only through the metric functions, one needs to use the Dudley-Finley approximation by Alan L. Dudley and J. D. Finley [1,2] in the small tidal charge limit (which is what has been considered in the paper). This, in fact, can be done for any Petrov type-D spacetime belonging to the Plebański–Demiański class (such as vacuum or electro-vacuum solutions) [3], and we refer to equation (3.3) of the paper as the Dudley–Finley equation. All other results related to the EMRI dynamics in the paper remain valid under this approximation scheme. We also like to acknowledge the anonymous referee who reviewed [4], submitted to Physical Review D, for correspondence that clarified the issue.

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