

Erratum: “Acoustic Error Approximation due to Gouy Phase in the sea” [AIP Advances 13, 075310 (2023)]

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These corrections in our original article [1] do not affect any conclusions.

1) Replace the Phrase leading to Equation 1 (“However, scaling these values is difficult, and there are other more direct methods,”) With this sentence: “ R_{ssp} is the radius of curvature due to Snell’s Law, based on the wavespeeds (SSPs).”

2) Equation 1: For the 2-column format, please remove the ‘×’ that makes the algorithm (second row) incorrectly appear to be a product (using ‘×’) with the first row of Equation 1. Explanation: This second row uses the first by averaging the exponents ‘b’ as in $E[b]$, separately; it is not a product of the last term on the first row. This second row makes a threshold decision on that average $E[b]$. People familiar with logarithms would see the connection, that the $\log(R^{-b})$ is proportional to $-b$. It could be appropriate to add ‘focus’ as in ‘focus detected if’ rather than just ‘detected if.’ However, the final ‘focus found’ result probably makes that clear.

3) Add the phrase ‘without using Equation 1’ to the sentence after Equation 1 that starts “Ocean SSPs ...” This sentence is right after ‘Sec. IV’, before the period. This is probably understood, but for some readers it would clarify that we did not use Equation 1 for the results in this paper. This should now read: “Ocean SSPs (Fig. 6) are similar enough to calculate the foci directly from the SSPs, as in Sec. IV, without using Equation 1.”

4) The second sentence after the subsection title (‘II.D. Alternate physics and analysis methods’), “A short summary of this reflective convergence serves to compare our concentration ...” Replace “compare” with “contrast against” to become “... convergence serves to contrast against our concentration”. The existing grammar is adequate, but could use this clarification.

7) II.D. Alternate physics and analysis methods, second paragraph: Make SSP plural to become “The use of example distributions of SSPs and other parameters”

8) At the end of IV.A ‘The SOFAR’ (its last sentence, paragraph 2), Replace from “but are more out-of-phase ...” so that after “converge” it reads like so: “... yet have more volume of superposition than a (theoretically) symmetrical focus.”

9) Change title of subsection “IV.B Constant SSP produces a single bounce ...” to become “Constant-Slope SSP ...” (adding ‘-Slope’). This is a long title for a 2-column article. However, this clarifies the concept.

10) At the end of Section IV.C, replace v_{ox} with c_0 . It would be adequate to just delete the ‘x’, but this speed is more of a constant than a variable.

11) Add “Equation 1” to the Conclusion’s last sentence, before the Acknowledgment so that it reads as: “So far, use of BSFs (a complicated method not reported here) via Equation 1 only discovered strong horizontal foci in the deep (the SOFAR).”

[1] M. C. Kobold, P.-P. J. Beaujean, “Acoustic Error Approximation due to Gouy Phase in the sea,” AIP Advances 13(7), 075310 (2023). <https://doi.org/10.1063/5.0154593>

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