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Corrigendum: Data-driven modeling of dissolved iron in the global ocean

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KEYWORDS

dissolved iron, monthly climatology, data-driven model, machine learning, controlling mechanism

A Corrigendum on

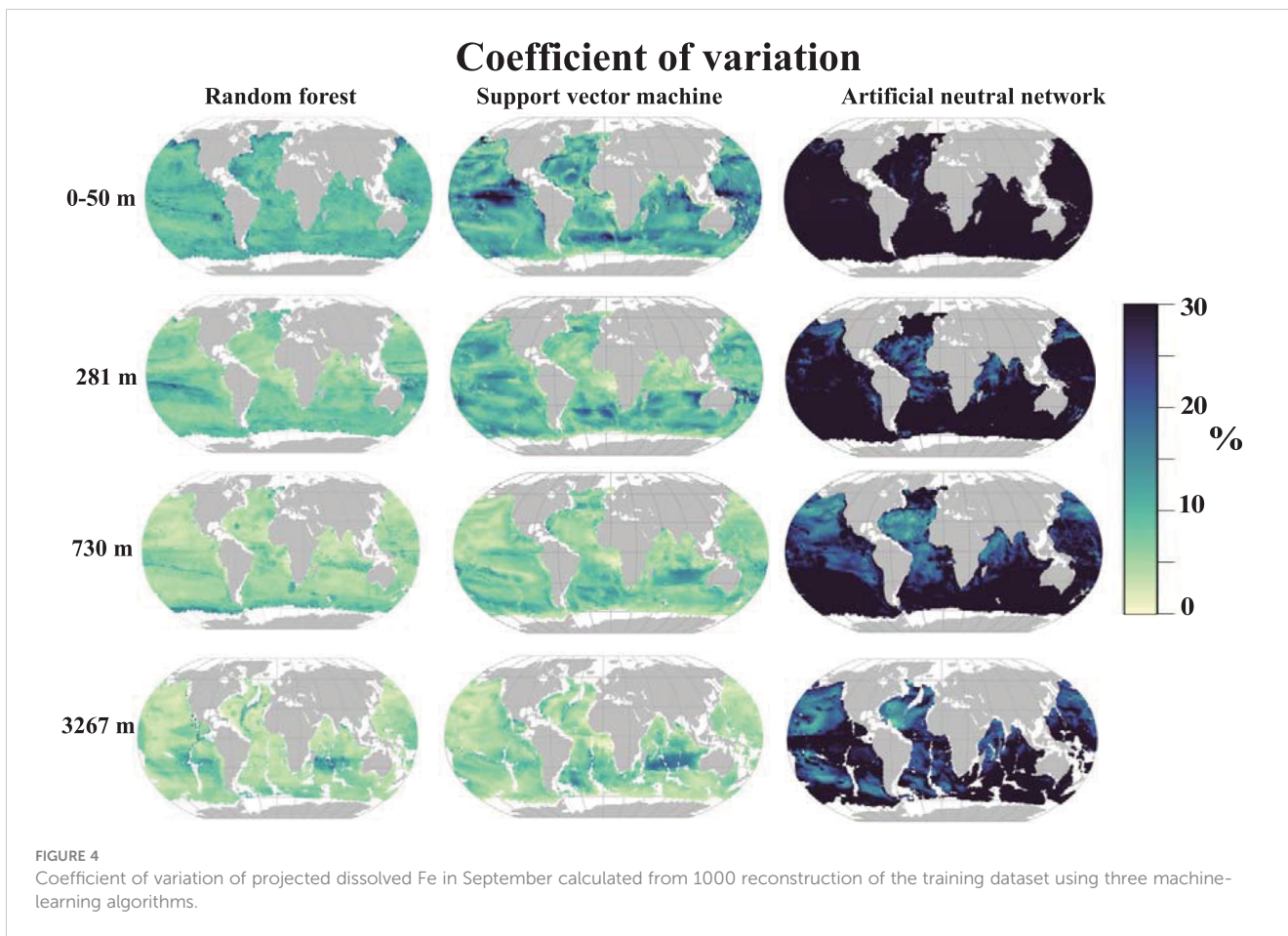
[Data-driven modeling of dissolved iron in the global ocean](#)

By Huang Y, Tagliabue A and Cassar N (2022). *Front. Mar. Sci.* 9:837183. doi: 10.3389/fmars.2022.837183

In the original article, there are two issues in [Figure 4](#). First, cross “artifacts” appear at the longitude and latitude of 0 degrees in the panels showing the coefficient variability (C.V.) of the Support Vector Machine and Artificial Neural Network (ANN) algorithms. Second, the wrong figures were included for the subsurface C.V. of the ANN algorithm in error, resulting in a significant disparity in C.V. observed in the ANN algorithm between the surface and other depths, as well as inconsistencies in the bathymetry for results at a depth of 3267 meters.

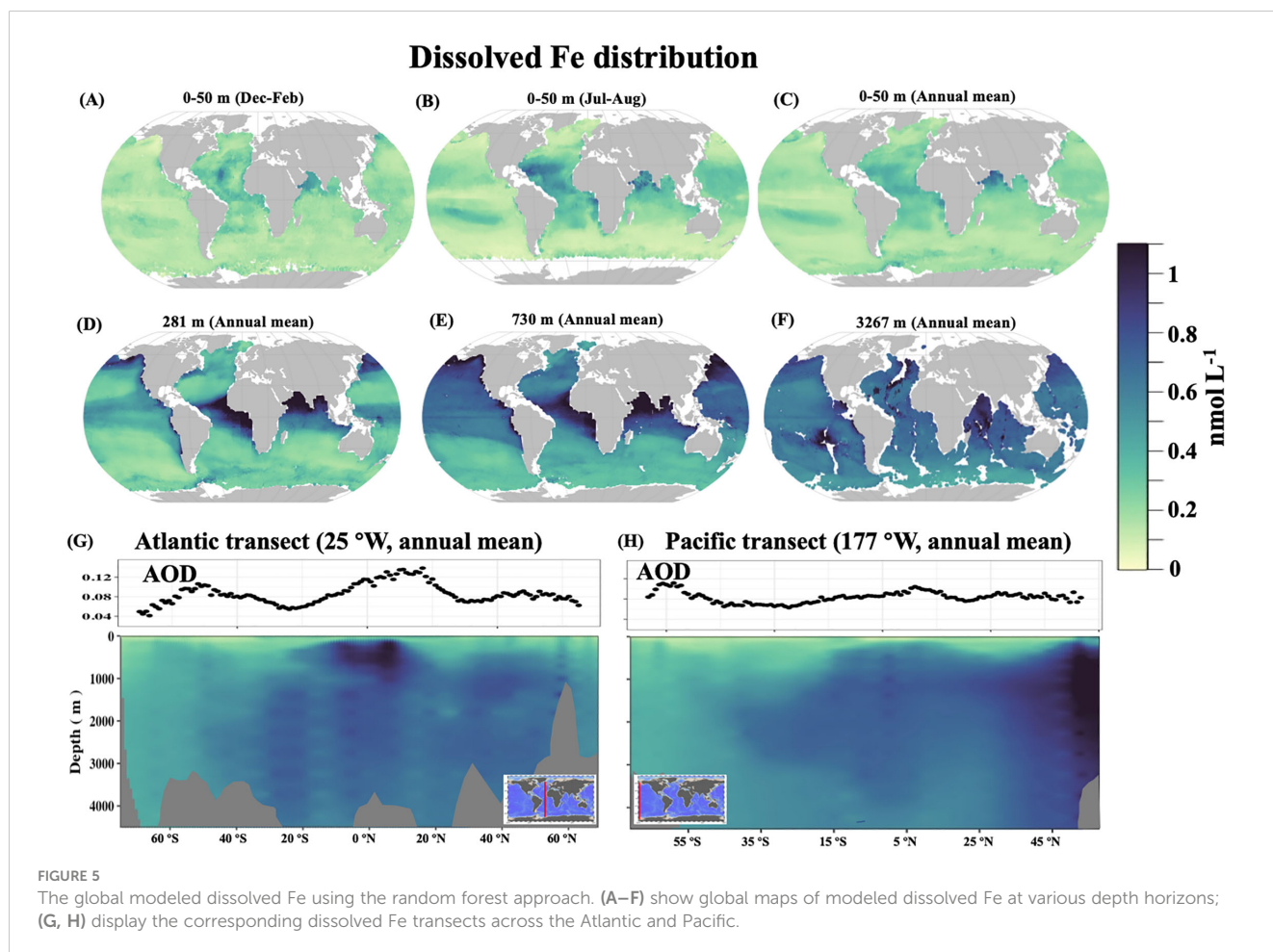
We have updated this figure to correct these plotting issues. In doing so, we note that there are small differences in the C.V. in the updated version for the Support Vector and Artificial Neural Network algorithms. However, we emphasize that the subsequent analyses and major findings of our study rely solely on the dissolved iron projection derived from the random forest algorithm. Therefore, correcting these errata do not affect the main findings and conclusions presented in our article.

The corrected Figure 4 and its caption appear below:



In the published article, there was an error in Figure 5 as published. The small world ocean map for the Atlantic and Pacific were swapped. The corrected Figure 5 and its caption appear below:

In the published article, there are some typos associated with the geographic coordinate transformation in Equation 1. In the model construction, we strictly followed the method proposed in Gade (2010)



to conduct the geographic coordinate transformation and also provided the correct equation in the submitted manuscript. The typo was not present in our original and revised article, but introduced during the manuscript copy-editing process and was not caught during proofreading. The corrected Equation 1 appears below:

$$\text{Coordinates} = \left[\sin\left(\text{latitude} \frac{\pi}{180}\right), \sin\left(\text{longitude} \frac{\pi}{180}\right) \cos\left(\text{latitude} \frac{\pi}{180}\right), -\cos\left(\text{longitude} \frac{\pi}{180}\right) \cos\left(\text{latitude} \frac{\pi}{180}\right) \right] \quad (1)$$

In the published article, the data link only leads to the first version of the simulated dissolved iron data product. We have replaced it with a link that provides access to all historical versions of the simulated dissolved iron product, allowing readers to track the most recent updates in the dissolved iron gridded product. The correct **Data availability statement** appears below:

“The products of the monthly climatological dissolved Fe generated in this study are available on the public data

library Zenodo (<https://zenodo.org/records/6994318>, doi: 10.5281/zenodo.6994318).”

The authors apologize for these errors and reiterate that these do not change the scientific conclusions of the article in any way.

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Reference

Gade, K. (2010). A non-singular horizontal position representation. *J. Navigation* 63, 395–417. doi: 10.1017/S0373463309990415