

Responses to the Editor

I am satisfied that the referees' comments have been addressed in this revised manuscript and am happy to accept it for publication subject to the technical corrections listed below.

Thank you very much for your significant and useful comments on the paper “Measurement report: Method for evaluating CO₂ emissions from a cement plant using atmosphere $\delta(\text{O}_2/\text{N}_2)$ and CO₂ measurements and its implication for future detection of CO₂ capture signals” by Ishidoya et al. We have revised the manuscript, considering your comments and suggestions. Details of our revision are as follows. The line numbers denote those of the revised manuscript.

Referee #2 made an important point about the distinction between exchange ratio (ER) and oxidative ratio (OR). ER shouldn't be used "conveniently" when OR is the appropriate term (e.g., l. 32, 33, 46). Please amend lines 37 to 41 to

"It is noted that the term oxidative ratio (OR) has also been used to designate exchange ratios (ER). Strictly speaking, there is a distinction between ER and OR; the ER refers to the exchange between the atmosphere and organisms or ecosystems while the OR indicates the stoichiometry of specific materials (Faassen et al., 2023)."

and use the appropriate term throughout the manuscript, as also requested by reviewer #2.

Lines 31-34: The sentence has been rewritten considering your comments.

“This approach uses $-\text{O}_2:\text{CO}_2$ exchange ratios (ER) or oxidative ratios (OR) ($-\Delta y(\text{O}_2)\Delta y(\text{CO}_2)^{-1}$) for terrestrial biospheric activities and fossil fuel combustion. Strictly speaking, there is a distinction between ER and OR; the ER refers to the exchange between the atmosphere and organisms or ecosystems while the OR indicates the stoichiometry of specific materials (Faassen et al., 2023)”

Also, we have changed some ER to OR to use the appropriate term throughout the manuscript. Please find them in the manuscript with track changes.

l. 229 & 230: Please delete the hyphen from "7 months". A hyphen only appears when used as a compound adjective (without the 's' after month), e.g., 7-month average.

Lines 227-228: The word “7-months” has been corrected to “7 months”, as suggested.

l. 348: Please change "24-hr" to "24-h", since the internationally accepted abbreviation for "hour" is h.

Line 346: The word “24-hr” has been corrected to “24-h”, as suggested.

Other points

Line 112: The words “data points shown in Fig. 2 is 9221” have been changed to “data points shown

in Fig. 2 is 9220”, since we have removed 1 error data from the original dataset (the original dataset is “Supplement_data.csv” posted in the ACPD and the revised dataset is “Supplement_data_r.csv” submitted previously).

Line 301: The words “should be also noted” has been changed to “should also be noted”.

Reference: We have noticed Ishidoya et al. (2013) is cited in the text, so that it has been added to the reference.

I expect I will get the URL and DOI for the deposited data in the WDCGG within a week.