Interactive comment on “Decoupled carbonate chemistry controls on the incorporation of boron into *Orbulina universa*.” by E. L. Howes et al.

Anonymous Referee #1

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This study presents boron data (B/Ca and d11B) for planktonic foraminifera *O. universa* cultured in a decoupled carbonate system. The authors concluded that the B/Ca ratios correlate with [B(OH)4-]/HCO3-, while the d11B values depend solely on pH. Although the data are fundamentally valuable, the culturing system is a concept recycled from a report by Kaczmarek et al. (2015b, BG), who used benthic foraminifera *A. lessonii*. Moreover, the discussion is repetitive. In addition, the quality of the data and the discussion are inferior compared to that earlier report. If this work cannot venture beyond a case study, I think that it is difficult to justify its publication in BG.

Specific comments:

Methods: d11B data should be normalized to NIST SRM 951, not NIST SRM 610, as most of the cited reports of the literature do.
L345: Is $d_{11}B = 18.8\%$ at pH 8.05 a mean value of the three experiments with different $[CO_3^{2-}]$ concentrations? Justify that calculation. This is also inconsistent with Fig. 3A.

L347-349: In spite of the large analytical error, it is difficult to conclude that no significant effect of $[CO_3^{2-}]$ on $d_{11}B$ was found. Is there any correlation between B/Ca and $d_{11}B$?

L447-448: The meaning of “The proxy should therefore be ground-truthed using core top samples” is unclear.

References: The cited Hanehan et al. (2015) is missing from the list of references.

Tables 1 & 3: Order the data at pH 8.05 in ascending order according to $[CO_3^{2-}]$.

Fig. 3: Put alphabet characters on each graph. The median values are shown as red circles, not black.

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