

## Responses to the Editor

Dear Prof. Jack Middelburg,

Firstly, we wish to express our gratitude to you for your suggestions and comments that helped us to improve our manuscript. We have addressed all comments point-by-point as outlined in detail below.

Sincerely,

Zijun Wu

**Question 1:** L.44, benthic carbon burial over geological timescales.

**Response:** Corrected as suggested. Please see this change in **Lines 44**.

**Question 2:** L. 66, replace on the other hand with however.

**Response:** Corrected (**Line 66**).

**Question 3:** L. 152, is this difference between median and mean an approximate correction or absolute? I believe the former.

**Response:** We have checked and revised this sentence (**Lines 150-151**).

**Question 4:** L. 178-180: “The correction factor for skewness bias” sentence needs a citation and more explanation. Is too cryptic in its present form.

**Response:** We have reorganized this sentence in the revised manuscript, including adding relevant references and Equation 7 to describe the calculation of the correction factor (**Lines 179-183**).

$$f_c = e^{2.65 \times s^2} \quad (\text{Eq.7})$$

**Question 5:** L. 386: identifying

**Response:** Corrected (**Line 388**).

**Question 6:** L. 417-419: rewrite sentence. You start to refer to two relationship and only mention one. I guess that you mean  $k$  with  $w$  and  $w$  with  $z$ .

**Response:** Thank you for pointing this out. We have rewritten this sentence as "... two empirical relationships of  $\langle k \rangle$  with  $\omega$  and  $\omega$  with  $z$ " (Lines 419-421).