

Dear Editor,

we are thankful for the very kind and helpful positive suggestions from the reviewers. Please see our responses typed in italics.

Response to Dr. Thomas Cronin

Neither of these 2 points are essential for the paper, but I would like to bring them to the authors attention. mention Grossman 1987 I believe computed a vital effect for the genus Elphidium, I used it in the 2000s for a mid latitude species of Elphidium. Ellen Thomas also have data on Elphidium vital effects in Long Island Sound. This doesn't mean *E. excavatum* has a vital effect, and the inserted sentence covers the topic, but more work is needed as shallow to mid depth benthics are used more and more for O18 studies.

Thank you very much for the suggestion. However, we are afraid that using vital effect of different species from genus Elphidium, from the different latitude would be too risky. We agree that more work is needed on this subject.

Second, though the paper is comprehensive in citing foram studies [ie Wollenburg's], recent papers by Taldenkova for Laptev kara Sea deglacial-holocene sediments have excellent detailed benthic foram assemblage results similar to those in this study.

We agree with this suggestion. A recent reference by Taldenkova et al., 2012 has been added to the revised version of the manuscript.

Response to Referee#2

The revised Version of this manuscript is now in an acceptable condition and may be accepted for publication when these four things have corrected:

- 1) Correct language, page 5 line 151-152: change "..., two slight cooling periods were observed..." to "..., two periods of slight cooling were observed..."

It has been corrected.

- 2) Correct language, page 13 line 671: change "... latter species dominates over *E. excavatum* f. *clavata*..." to "... latter species dominates more than *E. excavatum* f. *clavata*..."

It has been corrected.

3) Correct language, page 19 line 1123: change "... and a slight delivery of IRD..." to "... and a minor delivery of IRD..."

It has been corrected.

4) Add reference to figure caption of figure 6; there is no reference for the ice core data (GISP2)

A reference has been added.