

# ***Interactive comment on “Detecting the onset and effects of major northern hemisphere glaciation in the abyssal tropical Atlantic Ocean” by Brent Wilson and Lee-Ann C. Hayek***

**Anonymous Referee #2**

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In this manuscript, Wilson and Hayek use previously published benthic foraminifera assemblage data (Yasuda, 1997) and statistically analyses developed by Wilson and Hayek to investigate changes in the benthic foraminifera community over the Northern Hemisphere Glaciation. The major finding is that the benthic foraminifera community has more faunal turnover after Northern Hemisphere Glaciation, which may be related to a repositioning of the Intertropical Convergence Zone.

Given that this paper presents no new data and primarily relies on self-citations for faunal indices, which are generally poorly described and contextualized, I suggest this manuscript should be rejected.

The current scope of the paper is limited. This study design could be greatly improved

by either creating a transect of sites spanning the equator to 30N to investigate changes in the ITCZ or using an Atlantic-wide transect to investigate changes in thermohaline circulation. Using previously published data and the author's statistical techniques are perfectly acceptable, but I feel the analyses should transcend a single site to a broader compilation. Something like this would be an incredibly valuable contribution to our understanding of biotic responses in global climate transitions that impact the deep ocean.

Specific comments:

Line 42: Philander Lines 38 and 43-46 is the fact that there isn't slumping important for the introduction? Should this be more in the methods? Line 47: examine Line 49: The abstract says 2.54 Lines 103-104: normally distributed should be lowercase Lines 106-110: is this statistical aside important for the bulk of the paper? Should the statistics be reported in a table? Lines 122-123: is there a way to graphically represent these biozones? Is this important to the discussion? Line 162: What is "S"?

In the discussion also point the reader to the specific figures.

Lines 322-334: is there a citation to show that the abundance of *wuellerstorfi* is related to current speed? I think that the connection and interpretation of the current speed and *wuellerstorfi* is tenuous.

On figure 3, label the figures with the different taxa

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Interactive comment on Clim. Past Discuss., doi:10.5194/cp-2015-185, 2016.

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