

**Response to** Paul Pukite (SC1)

I thank Dr. Pukite for his interesting short comment on the paper. Below is the comment in bold font, my reply in italic font and the changes in manuscript in normal font.

1. Comment of the referee:

**"All of the results of continuation methods described above were obtained under stationary forcing and for many in the field this seems disjoint from the real climate system, which is obviously forced by a non-stationary insolation component (on diurnal, seasonal and orbital time scales). "**

**Are tidal forcing factors considered on orbital time scales? According to Munk and Wunsch, tidal factors are a factor in overturning circulation.**

**1. Munk, W. & Wunsch, C. Abyssal recipes II: energetics of tidal and wind mixing. Deep Sea Research Part I: Oceanographic Research Papers 45, 1977–2010 (1998).**

Author's reply:

*Tidal factors are certainly important to maintain the mean state ocean circulation on long time scales, but they are usually not considered when looking at orbital variations, where changes in this mean state are considered. Effectively, they are represented at a high aggregate level by the vertical mixing coefficients in the ocean model component.*

Changes in text:

No changes in the text needed.