

Interactive comment on “Variations of Mediterranean–Atlantic exchange across the late Pliocene climate transition” by Ángela García-Gallardo et al.

Anonymous Referee #1

Received and published: 8 November 2017

The authors should be congratulated on presenting a relatively well written assessment of the Atlantic inflow to the Mediterranean during the Late Pliocene. Using isotopic gradients across the Strait of Gibraltar is a reasonable method as long as the time averaged signal is large enough. The organization, figures and tables are all basically good. I made a number of comments on the pdf as well.

I am confused by the biostratigraphy/biochronology you are indicating for Figure 2. I assume the use of “top” and LO are interchangeable? You claim the stratigraphic framework is established based upon indicated biostratigraphic tie points and visual correlation of the d18O records. Are the dates you provide for *D. pentaradiatus* and *D.*

C1

surculus at Site 978 determined from your isotopic correlation or are they based upon published dates for these bioevents? You appear to place more weight on *D. surculus* than you do on *D. pentaradiatus* but don't comment on it. There are equally reasonable correlations between the upper part of Site 978 and the Rossello section based upon *D. surculus* as a tie point and assuming LO of *D. pentaradiatus* to be diachronous. I think you need to provide more detail on how the biochronology relates to the stratigraphic framework, otherwise why show those events?

Your interpretation of the pollen data indicating warmer and wetter conditions in the Mediterranean during most of the Pliocene is at odds with several previous studies. My understanding of these data is that the NW Mediterranean and Europe were wetter than present day but the SW Med was basically the same as or drier than the region is today. I've provided further comment on the annotated manuscript.

I would avoid using 4-letter genus abbreviations. I'm not sure of CP guidelines on this but it is definitely non-standard and not necessary with the taxa you are using.

Make sure all values have units associated. For instance, you report SST as °C but salinity with no unit at all.

The use of Ma and My has gotten confused in recent years. Whatever the CP preferences are you need to follow them consistently. You sometimes use Ma for duration and other times Myrs. This needs to be fixed throughout the text and tables.

The supplementary data are inadequate as provided. A list of ages and values is not sufficient for others to be able to critically assess your findings or reproduce the data. Provide the sample information in standard ODP format in addition to your ages.

Unless CP has changed the instructions to authors, journal names should be abbreviated in the References section.

Please also note the supplement to this comment:

C2

<https://www.clim-past-discuss.net/cp-2017-134/cp-2017-134-RC1-supplement.pdf>

Interactive comment on Clim. Past Discuss., <https://doi.org/10.5194/cp-2017-134>, 2017.