Interactive comment on “Holocene hydrography evolution in the Alboran Sea: a multi-record and multiproxy comparison” by Albert Català et al.

Anonymous Referee #2

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This paper provides an in-depth comparison of the paleoceanography of the Alboran Sea from late Glacial time to the present. The main focus is on a comparison of SST reconstructions using Mg/Ca versus alkenones. Interesting discrepancies are found, and an explanation is offered in terms of the seasonality of the signal from G. bulloides, and how that may have changed over time. The paper recognizes 3 intervals that represent changing conditions in the Alboran Sea. One of these transitions occur at ~4.2ka BP but this is by no means a main focus of the paper. I question, therefore, if this is an appropriate contribution for a Special Section of Climate of the Past devoted to a "4.2ka BP event". I think the paper is well-suited to be published in CoP, but given that >90% of the paper is devoted to a comparison of Mg/Ca & alkenone-derived SSTs and their implications, I suggest that the paper be accepted for publication, but not in the "Special Issue". Technical points: lines 137-140: "...Seawater δ18O (δ18Osw) was obtained after removing the temperature effect, with the Shackleton paleotemperature equation (Shackleton, 1974) on the G. bulloides δ18O signal using the G. bulloides Mg/Ca–SST values. ..." In view of the issues discussed later (re MG/Ca discrepancies with alkenone-derived SSTs) can you say whether this is significant in your derivation here? This may require a brief explanation, expanding on this point. lines 338-340: "...from transitional to subpolar water (Kucera and Darling 2002; Kucera et al., 2005) but they start to be scarce in water with temperatures over 18°C." As this is written "they" refers to genotypes. I think "they" should be replaced by " G. bulloides"...

Some improvements in English are needed throughout the manuscript.