

# ***Interactive comment on “A paleoenvironmental reconstruction of the last 15 000 cal yr BP via Yellow Sea sediments using biomarkers and isotopic composition of organic matter” by A. O. Badejo et al.***

## **Anonymous Referee #2**

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Comments: The authors reported biomarker (long chain n-alkane and alkenone) and carbon isotope (bulk organic and n-alkane-specific) records in the Yellow Sea from the Last Glacial Period (15000 years ago) to the mid-Holocene (7000 yr ago), and this paper contains valuable data for evaluation of millennial-scale climatic fluctuation and identification of climatic event(s) for paleoclimatology and paleoceanography in the northwestern Pacific / eastern Asian regions including marginal seas. In addition, I think that there is potential for clarifying long time scale climatic systems such as land - ocean climatic linkage associated with East Asian monsoon (EAM) in their

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data obtained from marginal sea area. However, explanation and discussion in the present manuscript are superficial to implicate the millennial-scale variations in paleoceanographic and paleoclimatic conditions in the study region. In particular, I entirely disagree with discussion for data of pristane/phytane (Pr/Ph) and pristane/C17 n-alkane (Pr/n-C17) ratios demonstrated by the authors. The Pr/Ph and Pr/n-C17 are generally applicable as redox or maturity proxies to significantly mature sediment samples deposited during periods older than the Pliocene. Such isoprenoid compounds are commonly identified as functionalized isoprenoid (e.g. phytol) and unsaturated isoprenoid alkene (e.g. pristene and phytene) from late Quaternary sediment. We can recognize that the pristane and phytane are very minor compounds in a chromatogram of hydrocarbon from the Yellow Sea sediment as Figure 4. It is possible that these compounds are derived from more mature organic source(s) such as fossil fuel delivered from China continent. Higher values of Pr/n-C17 ratios in sediment layers deposited during the Younger Dryas event (Fig. 6) imply that more mature organic matter such as coal might be transported more efficiently from China to the Yellow Sea, although it is only speculative. Also, the English language needs major revision. The authors should be advised to seek the help of a native English-speaking colleague. The present text in the ms requires many grammatical and style corrections (it therefore, is very difficult to understand discussion/demonstration in this ms). Thus, I do not recommend publication of this manuscript until a major revision is undertaken.

Please also note the supplement to this comment:

<http://www.clim-past-discuss.net/10/C1056/2014/cpd-10-C1056-2014-supplement.pdf>

Interactive comment on Clim. Past Discuss., 10, 1527, 2014.

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