



Department of Earth and Space Sciences | Merion Science Center, Room 207  
West Chester University | West Chester, Pennsylvania 19383 | 610-436-2727 | fax: 610-436-3036 | [www.wcupa.edu](http://www.wcupa.edu)

February, 22, 2020

Dear editor and the authors,

I completed reviewing the manuscript “Late Holocene (0-6ka) sea-level changes in the Makassar Strait, Indonesia”. The paper reports 24 new sea-level index points created to reconstruct paleo sea-level estimates during the last 6 ka. The index points are derived from 24 fossil microatolls from 5 islands of Spermonde Archipelago, Indonesia. The region is known as the far-field region, where the 6-3 ka sea-level highstand was suggested by previous researchers and predicted by GIA models. The higher than present sea level in equatorial region was explained by various mechanisms. The complexity of the processes resulted in special-temporal variability of sea level during Late Holocene and continues to impact the different areas along the coast at various rates. Further understanding of sea-level histories are essential for predictions of future sea level scenarios on local and regional scales. The manuscript reports new data along with previously published results and interpretation that address that problem.

High quality data presented by authors include age and elevation of fossil corals and their indicative meaning based on accurate calculations of high range of living microatolls. Authors made an effort to explain each of the applied uncertainty. The open-access data available as Supplement Materials also contained water level measurements, 54 GIA models with Jupyter notebook, and the scripts. The new data was combined with 20 previously surveyed microatolls from the same archipelago and used for regional paleo relative sea level reconstruction.

Authors critically re-evaluated reported index points by De Klerk (1982) and Tjia et al. (1972) and suggested to reconsider sediment interpretation as high-magnitude storm deposits and until further field investigation exclude them from sea-level compilations.

I also carefully reviewed authors’ responses to comments by two anonymous reviewers and concluded that the manuscript was significantly improved since its original submission and that authors critically addressed reviewers concerns and suggestions.

I suggest that the manuscript will be considered for publication after few minor revisions.

1. In the Abstract authors state that they are reporting 24 new index sea-level points (line 38). However, in the Conclusion the authors report 25 index points (line 556). It is my understanding, that microatoll PB-FMA 4 index point was rejected. Please clarify.
2. I suggest to add indexes “a” and “b” to the panels on Figure 8 to be consistent with other figures format.
3. I suggest to add indexes a, b, c, d to Figure 11. Text references to Figure 11 have already include the appropriate indexes (lines 530, 535, 539, and 542).

In addition, I agree with R1's comment 2 regarding the anthropogenic subsidence on Barrang Lompo island being the major reason for a low rate of sea level rise. Since the instrumental data to support the proposed hypothesis does not exist, authors suggest that high rate of coastal erosion on the island could be indirect evidence of human impact and propose to further investigate this idea or leave the question open inviting other plausible explanation of the low rate that mismatch the regional sea level trend.

In the summary, I believe that the manuscript presents valuable data and paleo sea-level reconstruction using best-fit GIS model and is suitable for publication in CP. Analysis of ice models beyond the study area empathizing the need for GIA correction as essential for estimate of eustatic sea-level changes and future predictions presents an interest to a broader scientific community.

Sincerely,

A handwritten signature in black ink that reads "D Nikitina". The first letter "D" is significantly larger and more stylized than the rest of the name.

Daria Nikitina  
Professor of Geomorphology  
Department of Earth and Space Sciences  
West Chester University