

**Author Technical Corrections in Response to the Topic Editor Report “Simulated Zonal Current Characteristics in the Southeastern Tropical Indian Ocean (SETIO)” - (OS-2020-91)  
by Nining Sari Ningsih et al.**

We thank the Topical Editor, Dr. Viviane Menezes, for guidance through this process. The final technical remarks are shown here in black text, whereas our response is in blue text.

Topic Editor Decision: Publish subject to technical corrections (02 Jul 2021) by Viviane Menezes

Comments to the Author:

Dear Dr. Ningsih,

We have received the two reviews of your MS entitled "Simulated Zonal Current Characteristics in the Southeastern Tropical Indian Ocean (SETIO)." Both reviewers agree that the new version is suitable for publication in Ocean Sciences, and all their concerns have been addressed, although one of them found the abstract too long. I have taken a quick look at the revised MS and agree with the reviewers--the MS is much improved, but the abstract is excessive length. Generally, abstracts have between 150-300 words, and yours have 527. Also, there are too many acronyms.

Please take a look at the recommendation from the OSD website: "Abstract: the abstract should be intelligible to the general reader without reference to the text. After a brief introduction of the topic, the summary recapitulates the key points of the article and mentions possible directions for prospective research. Reference citations should not be included in this section unless urgently required, and abbreviations should not be included without explanations. An abstract should be short, clear, concise, and written in English with correct spelling and good sentence structure."

Thus, I am recommending the MS for publication subject to technical corrections.

Thank you very much. I am very glad to hear that the MS has been accepted for publication subject to technical corrections. On behalf of all authors, we really appreciate all your help and guidance with the manuscript revision. In addition, we thank the reviewers for the time and effort that they invested into the review of our manuscript, and for their helpful comments, corrections, and suggestions, which helped make our manuscript stronger.

The abstract must be shortened.

Thank you for the thoughtful suggestions and comments towards improving our manuscript. We have shortened and refined the abstract. In the revised version, it has 300 words (L# 9–26), as follows:

*Detailed ocean currents in the Southeastern Tropical Indian Ocean adjacent to southern Sumatra-Java coasts have not been fully explained because of limited observations. In this study, zonal current characteristics in the region have been studied using simulation results of a 1/8° global HYbrid Coordinate Ocean Model from 1950 to 2013. The simulated zonal currents across three meridional sections were then investigated using an empirical orthogonal function (EOF), where the first three modes account for 75–98% of the total variance. The first temporal mode of EOF is then investigated using ensemble empirical mode decomposition (EEMD) to distinguish the signals.*

*This study has revealed distinctive features of currents in the South Java Current (SJC) region, the Indonesian Throughflow (ITF)/South Equatorial Current (SEC) region, and the transition zone between these regions. The vertical structures of zonal currents in south Java and offshore Sumatra are characterized by a one-layer flow. Conversely, a two-layer flow is observed in the nearshore and transition regions of Sumatra. Current variation in the SJC region has peak energies, which are sequentially dominated by semiannual, intraseasonal, and annual timescales. Meanwhile, the transition*

*zone is characterized by semiannual and intraseasonal periods with pronounced interannual variations. In contrast, interannual variability associated with ENSO and IOD modulates the prominent intraseasonal variability of current in the ITF/SEC region. ENSO has the strongest influence at the outflow ITF, while IOD's strongest influence at southwest Sumatra, with the ENSO (IOD) leading the current by four months (one month). Moreover, the contributions (largest to smallest) of each EEMD mode at the nearshore of Java and offshore Sumatra are intraseasonal, semiannual, annual, interannual, and long-term fluctuations. The contribution of long-term variation (19.2%) at far offshore eastern Indian Ocean is larger than the interannual (16.3%) and annual (14.7%) variations. Future studies should be conducted to investigate this long-term variation.*

Also, in the Introduction, two phrases in sequence (L#58-L#60) start with "Meanwhile" which makes the text a bit hard to understand. The authors may want to fix this issue as well. L#58-60: Meanwhile, 60-day variations are the dominant feature in the SJUC, which are forced by intraseasonal atmospheric variability associated with the eastward movement of the Madden-Julian Oscillation (MJO) over the eastern equatorial Indian Ocean. Meanwhile, seasonal variabilities of SJC and SJUC that exist along the coasts of western Sumatra and southern Java have been investigated based on observation data (e.g., Sprintall et al., 1999; 2010; Qu and Meyers, 2005).

We would like to thank you for the insightful and careful review of our manuscript. We have fixed this issue (L#58–60 in the previous MS; L#47–50 in the revised MS), as follows:

*Meanwhile, 60-day variations are the dominant feature in the SJUC, which are forced by intraseasonal atmospheric variability associated with the eastward movement of the Madden-Julian Oscillation (MJO) over the eastern equatorial Indian Ocean.*

*On a seasonal timescale, variabilities of SJC and SJUC that exist along the coasts of western Sumatra and southern Java have been investigated based on observation data (e.g., Sprintall et al., 1999; 2010; Qu and Meyers, 2005).*

I look forward to receiving the revised manuscript soon.

Best regards,  
Viviane Menezes

We thank the Topical Editor and the OS editorial support team for wise advice and support during this process.