

# ***Interactive comment on* “Satellite radar altimetry for monitoring small river and lakes in Indonesia” by Y. B. Sulistioadi et al.**

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## 1. General Comments

The authors gratefully thank the 1st anonymous referee for his/her critical comments. These comments and suggestions are vital in improving the quality of this manuscript, as the authors desired. In the following sections, each comments and corrections are addressed. The final version of the article will reflect the changes listed here. Regarding the Technical Corrections, the authors prepared the response in a table that could not be fit here. Please see the supplement for more complete response, including response for each Technical Corrections.

## 2. Specific Comments

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2.1. Retrieval of water level fluctuation of a river as narrow as  $\sim 54$  m without validation Solutions/Explanations: This issue is also raised by the anonymous referee #2. The authors will carefully reviewed the manuscript and revise any statement that imply “successful altimetry measurement (including validation) of the small river (width 54 m)”. It will be emphasized in the text that the water level fluctuation was rather “indicated” than actually “measured and validated”. In addition, in the conclusion section, it has been mentioned as “potentially observable”.

2.2. Delineating the boundary for the 54 m width river Solutions/Explanations: It has been explained that measurements of the river and lake width are carried out through (1) visual interpretation of Landsat-7 and Landsat-8, or (2) medium-scale (1:50,000) topographic maps released by the Indonesian Geospatial Agency. That being said, when Landsat imagery could not provide detail boundaries between water bodies and land surface, the authors determine such boundaries along with the buffer based on the topographic maps.

2.3. Process of selecting the waveform shapes for different water bodies and if the approach can be automated Solutions/Explanations: The process was manual. The standard waveform shapes (Brown-like, specular, flat-patch) were displayed along with another window showing waveform shapes from each measurements along with their ID. The IDs of measurements with matched waveform shapes were noted down then processed further. It is planned to automate this process, such as the one done by Dabo-Niang (2006), through pattern recognition and waveform shape geometry.

2.4. Why need to prove the merit of Ice-1 Solutions/Explanations: The main argument is that all four standard re-trackers were not intended to measure inland water. They range from ocean, ice sheet and sea ice studies. In addition, satellite altimetry processing might be different from one region into another. So far, only Frappart et al (2006) evaluated the performance of those four re-trackers for monitoring inland water, thus need evaluation in other region.

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Please also note the supplement to this comment:

<http://www.hydrol-earth-syst-sci-discuss.net/11/C1249/2014/hessd-11-C1249-2014-supplement.pdf>

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 2825, 2014.

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