

## ***Interactive comment on “Trapped Planetary (Rossby) Waves Observed in the Indian Ocean by Satellite Borne Altimeters” by Yair De-Leon and Nathan Paldor***

**Anonymous Referee #1**

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The manuscript presents estimates of the propagation velocity of Rossby waves at the Indian Ocean, south of Australia, using different methods, and compare them with current theories. The estimates are obtained from satellite data.

In general, the manuscript is very clear and the results present a coherence between observations and the theory. However, there are some few questions that would need more explanations regarding, mainly, the estimates close to coast. This issues follow below.

-In page 4, line 9, it is not clear why the mean ssh from 1993 was removed. Why not removing the average for the whole period? -In page 6 the authors mentioned an increase of the amplitude close to the coast. Although they state the topography is not

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an issue for that, it is hard to assume it. First, close to the coast, satellite altimeter sampling is not very accurate. Secondly, and most important, that region seems to include the slope and the shelf, where other processes are very important, such as topographic waves and continental shelf waves. The main dynamics is not determined by the theory presented by the authors in that region. -In page 14 the authors did not consider other explanations, as mentioned before, associated with the topography. The same theory is applied for a region with very distinct characteristics and as such should be analyzed. I would recommend removing the analysis of the data between the coast and 35oS. -The authors present 3 different methods to estimate the propagation speed, and consider all of them with the same reliability. It would be a good contribution if the differences among those methods could be discussed and some suggestion about the method that could better estimate the propagation speed in the domain could be given. -It would also be a good contribution a discussion about which of the current theories could better explain the observed propagation velocities.

As a conclusion, I would suggest the publication of the article after addressing the issues stated above.

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