

## ***Interactive comment on “Enhancing the accuracy of automatic eddy detection and the capability of recognizing the multi-core structures from maps of sea level anomaly” by J. Yi et al.***

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The manuscript presents a method to automatically detect oceanic eddies from SSH data. Eddy detection receives a lot of attentions in recent years. Many methods have been developed. There are three types of eddy detection methods. I would like to put this method in the first category using physical parameters. A derivative of variables will introduce details of the data, or the noises. That is where OW method needs to be improved. However the current method introduced in the manuscript has kept OW criteria by taking second derivative of SSH data, which is the weak part of the method.

The validation of eddy detection is a challenging and also tricky job because of two reasons: 1) how to define an eddy? Actually there is no universal and well-accepted definition. 2) how to define an eddy boundary, it is also a practical and theoretical

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question. In this manuscript, it fails to provide any definition or adopt any definition on these important concepts. The expert method has been tested and turned out to be very inefficiency method which should be discarded because it usually has a lot human errors in it, especially with a few experts.

Most comments on the existing algorithm presented in this manuscript lack substantial and convincing arguments. Some comments are only subjective. The comparison part among different methods is not well justified. The manuscript should credit authors who provided source codes of different methods for the comparison.

Any method has its own limitation. As a manuscript introduces a method, readers want to learn what is its limitation. Some criteria are required for every method and they should be provided explicitly in the manuscript for this method.

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