# Article information:

The effects of oceanic barrier layer on the upper ocean response to tropical cyclones - Yan - 2017 - Journal of Geophysical Research: Oceans - Wiley Online Library
<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2017JC012694>

# Article summary:

1. The influence of the barrier layer (BL) on TC intensification is complex and dependent on the stages, TC intensity, TC forcing time, and ocean stratification.

2. When a TC is weak or the TC-induced forcing cannot break through the ML, the presence of the BL leads to a thin ML, resulting in a large ML cooling and reducing the effective TC heat potential (ETCHP).

3. When TC-induced forcing is strong enough to break through the BL base and penetrates to the thermocline, the BL reduces the magnitudes of cooling temperature and of decreasing ETCHP compared to those without the BL, which is also favorable for TC intensification.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article “The effects of oceanic barrier layer on the upper ocean response to tropical cyclones” by Yan (2017) provides an overview of how oceanic barrier layers can affect tropical cyclone intensification. The article presents a comprehensive review of previous studies on this topic as well as new findings from its own research. The article is generally reliable and trustworthy; however, there are some points that could be improved upon.

First, while it does provide an overview of previous studies on this topic, it does not provide any counterarguments or alternative perspectives that may have been presented in these studies. This could lead to a one-sided view of this issue that fails to consider all possible angles. Additionally, while it does present evidence for its claims in terms of data from experiments and simulations, it does not provide any real-world examples or case studies that could further support its conclusions.

Second, while it does mention potential risks associated with tropical cyclones such as death and property loss due to their severity, it fails to explore other possible risks such as environmental damage caused by these storms or economic losses due to disruption in trade routes or tourism activities. This lack of exploration into other potential risks could lead readers to underestimate their severity or overlook them entirely when considering how they might be affected by changes in tropical cyclone intensity due to oceanic barrier layers.

Finally, while it does discuss how different conditions associated with upper layer oceans and tropical cyclones can affect whether or not an oceanic barrier layer will intensify a storm system, it fails to explore other factors such as climate change or human activity that may also play a role in this process. This lack of consideration for other external factors could lead readers to overlook their importance when assessing how they might affect tropical cyclone intensity in different regions around the world.

In conclusion, while “The effects of oceanic barrier layer on the upper ocean response to tropical cyclones” by Yan (2017) provides an overall reliable overview of how these layers can affect storm systems’ intensities, there are some areas where improvement could be made such as providing counterarguments from previous studies or exploring other potential risks associated with these storms beyond death and property loss. Additionally, more consideration should be given towards external factors such as climate change or human activity when assessing how they might affect tropical cyclone intensity in different regions around the world.

# Topics for further research:

* Impact of climate change on tropical cyclone intensity
* Economic losses due to tropical cyclones
* Environmental damage caused by tropical cyclones
* Upper ocean response to tropical cyclones
* Human activity and tropical cyclone intensity
* Alternative perspectives on oceanic barrier layers

# Report location:

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