

## ***Interactive comment on “Seasonal variability of the circulation in the Arabian Sea at intermediate depth and its link to the Oxygen Minimum Zone” by Henrike Schmidt et al.***

### **Anonymous Referee #2**

Received and published: 8 March 2020

#### General Comments

The manuscript addresses important concerns relating to the oxygen minimum zone in the Arabian Sea, but could benefit from a more complete comparison of the model output to observational data, including acknowledgement of existing observational publications.

#### Specific comments

It is not clear to me how “intermediate” depth is defined. On Page 2 Line 7 the OMZ is stated as 200-700 m depth, and Fig 3 has particle paths spanning from ~200-800 m depth, so I assume this must be the range, but it should be stated more clearly in the

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text (maybe in parenthesis behind the first reference to “intermediate depth”)

Page 4 Lines 26-29 not necessary

Page 5 line 21+ say model output were validated using YoMaHa data, but no detail is provided other than stating it “agrees very well.”

The manuscript states a lack of observational data, but several circulation studies have been done in this region that are not acknowledged in this manuscript. The manuscript would benefit from a more detailed description of how model output compare to both YoMaHa observations as well as previously published observations. Suggestions here: Zhankun Wang et al 2014 (Deep Sea Research) Seasonal and annual variability of vertically migrating scattering layers in the northern Arabian Sea Zhankun Wang et al 2013 (Deep Sea Research) High salinity events in the northern Arabian Sea and Sea of Oman Sarah Stryker Vitale et al 2017 (Dynamics of Atmospheres and Oceans) Circulation analysis in the northwest Indian Ocean using ARGO floats and surface drifter observations, and SODA reanalysis output

Page 9 Line 17- state approximate depths of isopycnals (here and elsewhere) in the text so the reader does not have to refer to the figure throughout

The last sentence of the conclusion is not clearly written.

#### Technical Comments

Page 4 line 12 “it’s” should be “its”

Page 8 Line 25- Not clear to me what “lack of 3 month” means- typo?

Page 14 Line 27- “weak” misspelled

Interactive comment on Ocean Sci. Discuss., https://doi.org/10.5194/os-2020-9, 2020.