

Review of « Improving Statistical Projections of Ocean Dynamic Sea-level Change Using Pattern Recognition Techniques” by Malagon-Santos et al.

The authors answered all my previous comments and questions. I really appreciate the introduction of Fig1 which help me understand the method. I find the paper improved overall. I would like to share with the authors only one minor comment I have.

We would like to thank the Referee for their positive feedback and welcome all comments aiming to improve our manuscript.

After their answer, I can recommend the paper for possible publication in Ocean Science.  
Minor comment

L169-176 : I do not understand the paragraph.

The authors state that: ‘zos is defined ... as the difference between local sea-surface height relative to the geoid, and its global mean over the ocean area (GMTSLR, or ‘zostoga’ in CMIP experiments)’.

As I understand, the authors consider the global mean thermosteric sea level added to zos at that point.

The purpose of this sentence was to highlight the two main variables that we are using in our analysis, DSL (or zos) and GMTSLR (or zostoga), and not indicate that we were somehow combining them. We agree with the Referee that, in its current form, this sentence can be misleading.

Then, the authors state: “Hence, by definition, DSL, or zos, varies locally due to ocean circulation and horizontal gradients, but its global mean is zero at every time step”.

I disagree as the global mean sea level contains the thermosteric contribution which is not equal to zero at each time step.

Do I miss something here? I encourage the authors to clarify the paragraph as it can be misleading.

We have now clarified this paragraph by improving the definition of DSL (zos) and not mentioning GMTSLR (zostoga) to avoid confusion. GMTSRL is now introduced in the following paragraph, where we indicate this variable has been successfully used in previous pattern scaling studies of DSL and express our intention of using it in our study as well (see lines 169 – 183 of the revised manuscript).