Review – Decadal sea level variability in the Australasian Mediterranean Sea
Specific (minor) comments:

1. ENSO and PDO are not defined (neither in the abstract or the main text). Although they are well-known acronyms, it should be defined.
2. Whenever talking about sea-level trends, it is important to mention the period that it referred to. For example, L24 a trend is given, but no period. Also the first sentence of the paper is 'over the last three decades', but then the older reference is 2013, so I assume you mean 1980-2010? Not including 2010-2020? Adding the period to the sentence would clarify this.
3. L22 you mention that some areas in the western tropical pacific have received a lot of attention. Maybe adding a more specific example would be nice.
4. L34: You mention the 'Luzon Strait'. I have no idea where it is. Having a study are map, with such names would help.
5. L35 'might amplify the signal'. Which signal?
6. L43-44: is the ITF variability governed large-scale climate events (like ENSO and PDO), or by the climate indices (like Niño3.4)?
7. L52: Wijffels and Meyers showed (instead of 'could show'), based on XBT observations, that sea-level anomalies… Would also be good to mention which period of observations they used.
8. L57: You mention 'mass and steric components'. I think it would be good to define to the reader what exactly are these components (not everyone will know). And mainly the steric contribution could be better explained, as you discuss it further on your results.
9. L61: are you talking about sea-level trends? ('reconstructed decadal trends during the…'). Make it clear to the reader.
10. The term halosteric appears for the first time on Line 67, and then again with the term thermosteric in the objectives of the paper (Line 83). But you didn't introduce what thermo and halosteric changes are. Although the readers of Ocean Sciences might be familiar with it, in my opinion you could briefly define thermo and halosteric changes before having it as one of the objectives of the paper.
11. Line 75 should be connected to the previous paragraph.
12. Line 104 should be connected to the previous paragraph.
13. Lines 104-106: Won't this freshwater budget correction affect then your halosteric analysis?
14. L122: is there a specific reason for using the years 1990-1991 as your climatological forcing?
15. L129: Add 'respectively' at the end of the sentence: 'isolate the momentum forced and buoyancy forced variability, respectively'.
16. L134 should be connected to the previous paragraph.
17. L139: Here you start about your validation with observations. It's important to highlight that you are using satellite altimetry observations, and that they only start in 1993
18. L143: Here and in the rest of the paragraph I think you meant figure 1?
19. L149: biases in relation to what? Model biases? Make it clearer ☺
20. L151: What is the reference period of the mean fields? Is it the same as the model biases (which I am assuming is for the entire period?)

21. Figure 2: Here locations where you don't have data (which is a lot of the AMS actually) has been plotted with the same color as land, which was confusing. So I suggest you to plot it in a different color. I was also left wondering why you don't have data there (I can understand from the observations, if are areas that are too shallow... but I would expect the model to have values there as well). So it might be worth adding one sentence about it in the main text and/or in the caption of the figure.

22. L162: I found the word 'confirming' a bit of a bold statement, I suggest replacing it with 'indicating'.

23. L164 and Figure 3: Here you sat that you are using different colorbar for the same figure. I can understand why you want to do this, since if you keep the range of panel d and e to 0-4 we won't be able to see the patterns... But I still find it a bit misleading. Even though the colorbars are indicating that they range only up to 1, I find it harder to compare the panels, which is a bit the point of the plot. So it's up to you, but I would suggest fixing the colorbars throughout the figure.

24. Both paragraphs at L167-179 are just talking about REF025 experiment. What about REF005?

25. L185: 'e.g.' should be followed by a comma. And the first name of the authors of the reference are appearing (Thomson, R.E.)

26. L190; Bring the reference to Figure 4 here ('REF020 and REF005 show a similar response to positive ENSO cycles (Figure 4.a,b)'.

27. Figure 3: Why are the grid lines here marking only 10˚N, 0˚ and 10˚S? And the longitudes are on a different spacing than in Figure 1 and 2. This is very small detail, but you could use always the same gridline spacing.

28. L200: Bring the reference to Figure 4d.e. here: 'the linear response to the PDO index (Figure 4.d.e.)...'

29. L200: I think you meant a 'and' here instead of 'to': 'strong amplitudes of 3 and 4 cm'.

30. L212: Figure 5d is about PDO... I thought you were talking about ENSO, so figure 5c?

31. L2017: 'PDO does not drive any buoyancy flux driven variability', in the AMS right? Because I can seem some variability on the surrounding seas around the AMS.

32. L224: How do you know that the mass fluctuations are small? Is this based on previous research, if so, then reference it.

33. Figure 5: Add variable name to the colorbar (R-squared), and also mention in the caption which coefficient you are showing (R-squared)

34. L233: halosteric anomalies complement (not amplify) the thermosteric signal (it is not because of the halosteric variation that the thermosteric signal will be higher, but you will have a total steric change that is higher).

35. L245: Remove 'does': changes during PDO cycles also manifest in the vertical profiles'.

36. Figure 6 caption: linear regression with (instead of to); move the 'of upper ocean currents' to the end of the sentence or to another sentence (right now it seems you made the correlation with the currents, but I believe you are just showing the currents). And are those the mean current velocity? Make it clearer.

37. First paragraph of 'Summary and conclusion' should be connected to the second one.

38. L269: pressure gradient between the Pacific and (not in) the Indian Ocean.

39. L270: Remove 'again'.
40. Line 289 should be connected to previous paragraph.
41. L306: Add 'current' with Kuroshio here and in the following mentions of the current (Kuroshio current flows…)
42. L324: 'McGregor demonstrated (not could demonstrate).
43. General conclusion statement: The resolution effect is clear for the biases, but it doesn't seem to have had a significant impact in your SSH variability analysis. I'm not sure if your final and general conclusion should be about this.