In their paper entitled "Factors contributing to the long-term sea level trends in the Iberian Peninsula and the Balearic and Canary Islands", the authors propose to assess the contributing factors to the mean sea level rise around the Iberian Peninsula. Having worked myself on the entire dataset distributed by the **PSMSL**, I would have questions regarding the data and how they were processed. Therefore, I suggest a minor revision.

Since my review will not be anonymous, the quotes I provide are only intended to illustrate my points and are not meant to be cited by the authors.

My first question is ultimately quite simple, and I will illustrate it with two examples.

Let's start with the tide gauge in Malaga. On the **PSMSL** website, unless I'm mistaken, the provided data is presented in my Figure 01.

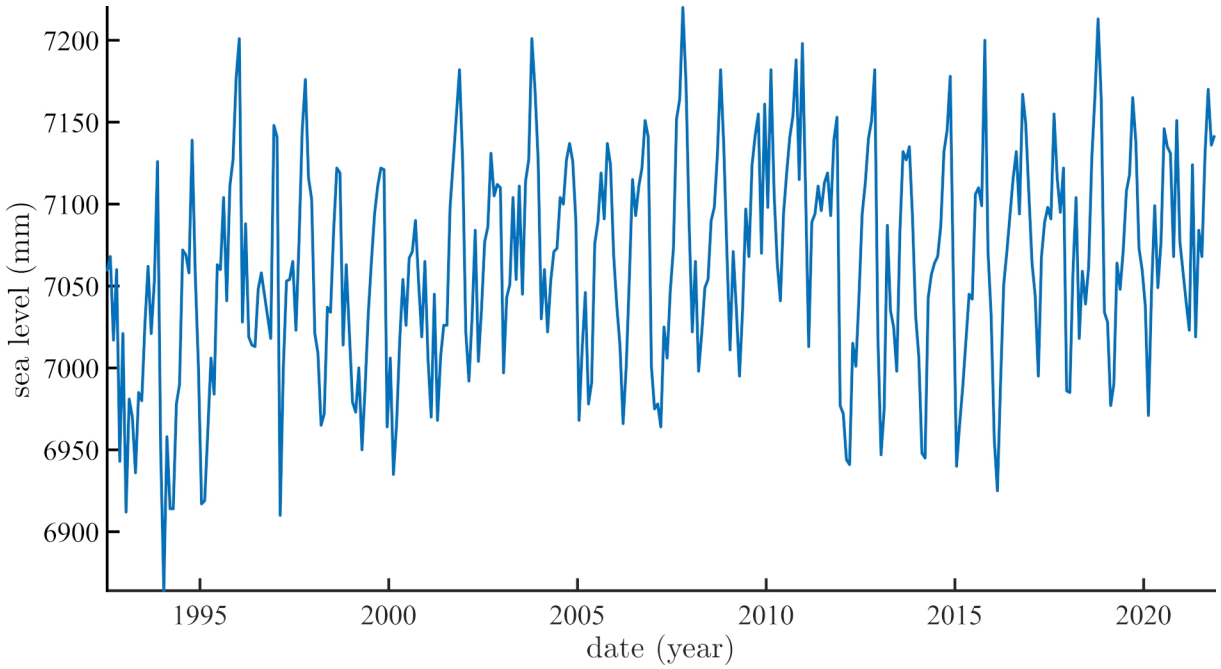


Figure 01: Malaga tide gauge

As we can see in this figure, the data begins in June 1992 and ends in late 2021. I have indeed read your supplementary materials (especially the green curve of your first Figure page 2), but I still don't understand where you obtained data from Malaga before 1992 and even since 1942. So, I understand that it's possible to patch data gaps by merging other tide gauges data, especially when the

tide gauges are nearly the same for the Northern Hemisphere (*cf.* Nakada and Inoue, 2005); but as we can see in your Figure 01 from your supplementary material, data are not exactly the same. How did you assess the quality of your reconstructions? And how do you know they don't impact the trends?

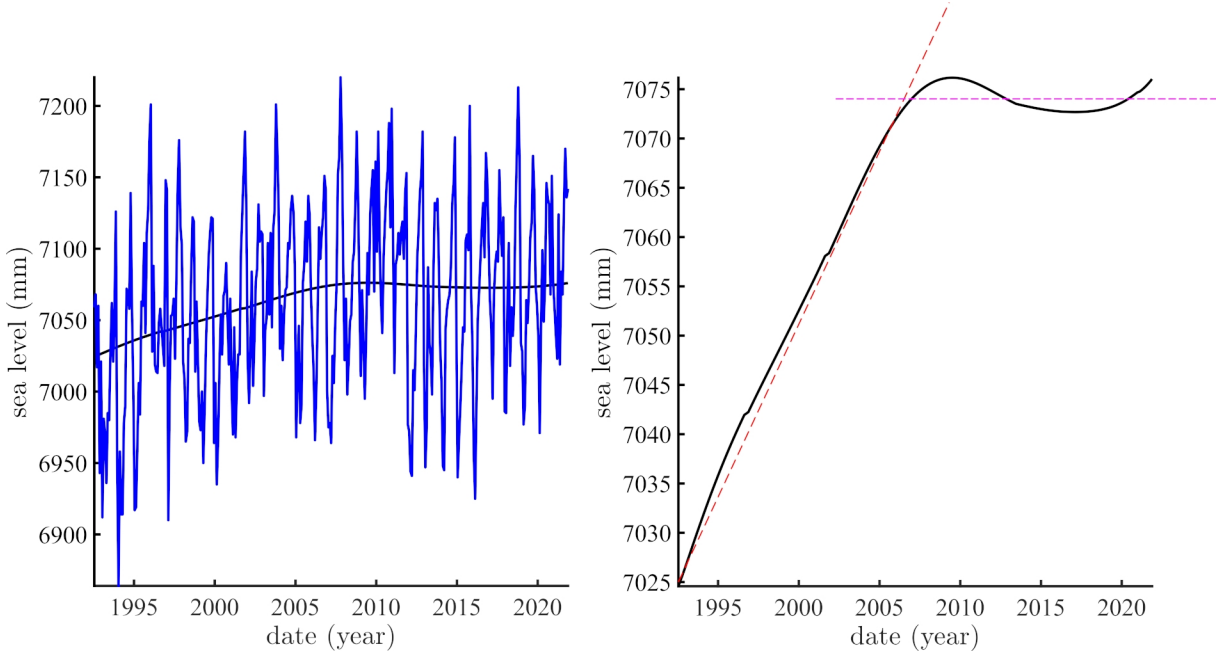


Figure 02: Malaga tide gauge and the trends

If you look my Figure 02 (with the trend extracted using wavelet analysis), there is a sharp and rapid change in slope recorded by the tide gauge in Malaga around 2005. How and why do you explain this using linear trends? Clearly, that is not the case. I could generalize my remark to all the tide gauges you have chosen!

Regarding the idea of taking into account atmospheric pressure and winds, it is an excellent idea, and we have done when we studied the variations of the trend of the **SLP** since 1850, the variations of all pseudo-components extracted from **SLP** since 1850 or for our study about the Sea Ice expansion. We have found a relationship between all the sea level parameters and 1) polar motion, length of day, astronomical forcing, and even recently, the Earth's magnetic field. All these observations are in agreement with the models proposed by Laplace (1799), Lagrange (1785), and Poisson (1826). How could we exclude the idea of a complete gravitational forcing? (For your information, we discussed the issue of **GIA** in Courtillot et al. 2022). Let me argue this last point. As already discussed with Lambeck, it is generally from the study by Nakibolgu and Lambeck (1980) that the concept of

GIA started being discussed. I would like to remind you that using only one-third of the knowledge of the sea ice data in the Northern Hemisphere, Nakibolgu and Lambeck (1980) were able to reconstruct the position of the rotational pole with an accuracy of better than 1%. This poses a problem if we understand correctly the theory of pole rotation as presented by Lambeck (2005). In the list of papers I just mentioned, and we are not the only ones, we have shown that both the trends and annual oscillations from all geophysical data series are strongly linked to the polar motion (Markowitz 1968, Stoyko 1968) for the trends, and to astronomy for the forced oscillations. How can your model take into account this information extracted from observation ?

There, I have finished with my questions, sincerely

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