

## ***Interactive comment on “Factors controlling pCO<sub>2</sub> variability in the eastern Gulf of Cádiz (SW Iberian Peninsula)” by Dolores Jiménez-López et al.***

**Anonymous Referee #2**

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In general, the manuscript is written with too many very short paragraphs. The topic of the presented research is interesting and pertinent in the actual context of climate change. The title is very appealing and the reader expects to learn about the processes that control the pCO<sub>2</sub> variability in the eastern Gulf of Cadiz. Unfortunately, the abstract does not reveal any factor controlling the pCO<sub>2</sub> variability. The conclusion indicates that: “temperature and biological activity are the two principal factors that explain the temporal variability of CO<sub>2</sub>”. This is the case everywhere in the ocean. There is nothing new here! Then (line 470), it is indicated that: “. . . the distribution is principally controlled by the temperature”. Here again, there is nothing new and this is normal.

Therefore, I would suggest the authors to change the title of their manuscript to more accurately reflect its content. The authors should also precise (and justify) what kind of

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linear regression (type I, type II, . . .) they did in order to determine the general trends. They should also detail all their calculations (including simple ones such as the mean capture capacity, . . .). The last sentence should be re-written to me more precise (what means “. . .variability of CO<sub>2</sub>. . .”; is it TCO<sub>2</sub>, CO<sub>2</sub> flux, pCO<sub>2</sub>???.; what means “. . .capacity of CO<sub>2</sub> capture. . .”; surface/depth, on what timescale?). The manuscript will gain in clarity if it were much concise. There is a need to remove some of the tables and figures.

In summary, this manuscript needs a major revision before publishing.

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