

Biogeosciences Discuss., referee comment RC2 https://doi.org/10.5194/bg-2021-82-RC2, 2021 © Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.

Comment on bg-2021-82

Anonymous Referee #2

Referee comment on "Particulate organic carbon dynamics in the Gulf of Lion shelf (NW Mediterranean) using a coupled hydrodynamic-biogeochemical model" by Gaël Many et al., Biogeosciences Discuss., https://doi.org/10.5194/bg-2021-82-RC2, 2021

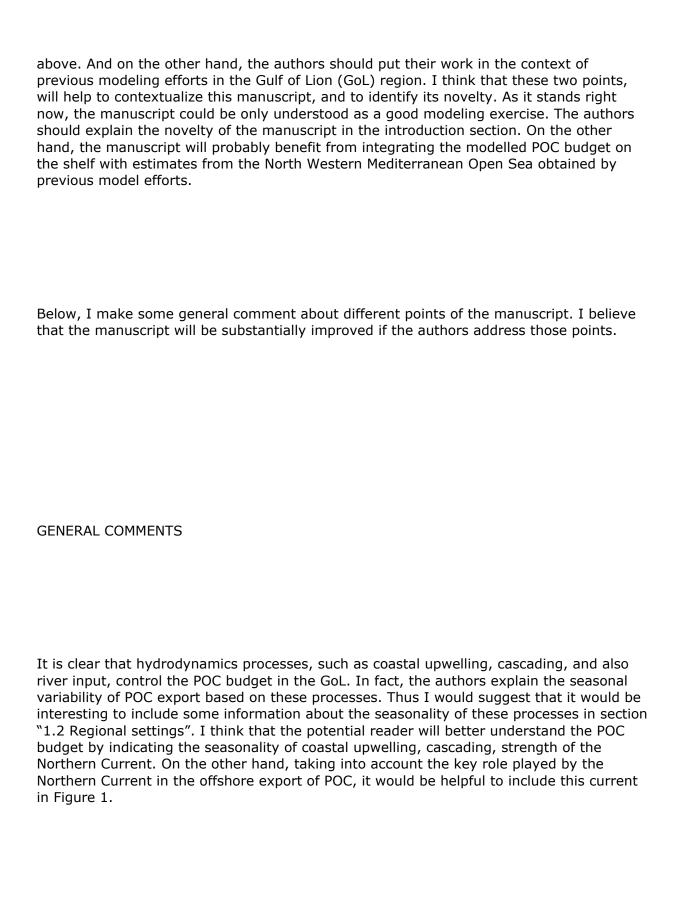
I think that the manuscript is a useful contribution, as it applies a coupled hydrodynamic – biogeochemical model for the Gulf of Lion (NW Mediterranean) to study the current particulate organic carbon(POC) budget in this continental shelf.

The manuscript is well written and well organized. The model is clearly explained, validated, and the results and discussion are well developed (for the most part; see below). It perfectly fits within the scope of the journal, being of interest to a

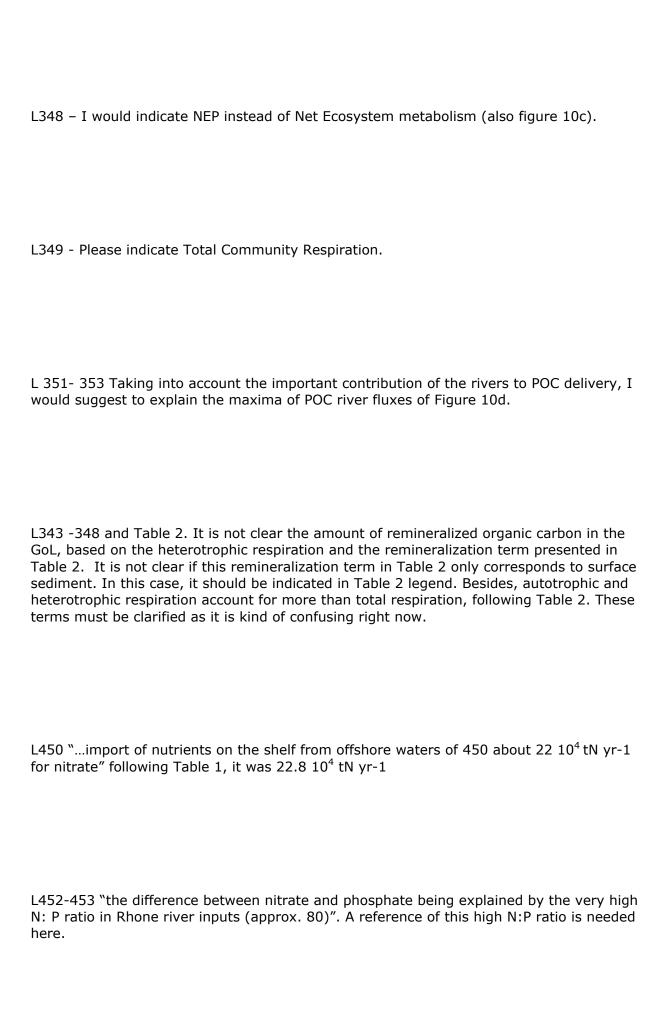
large group of readers.

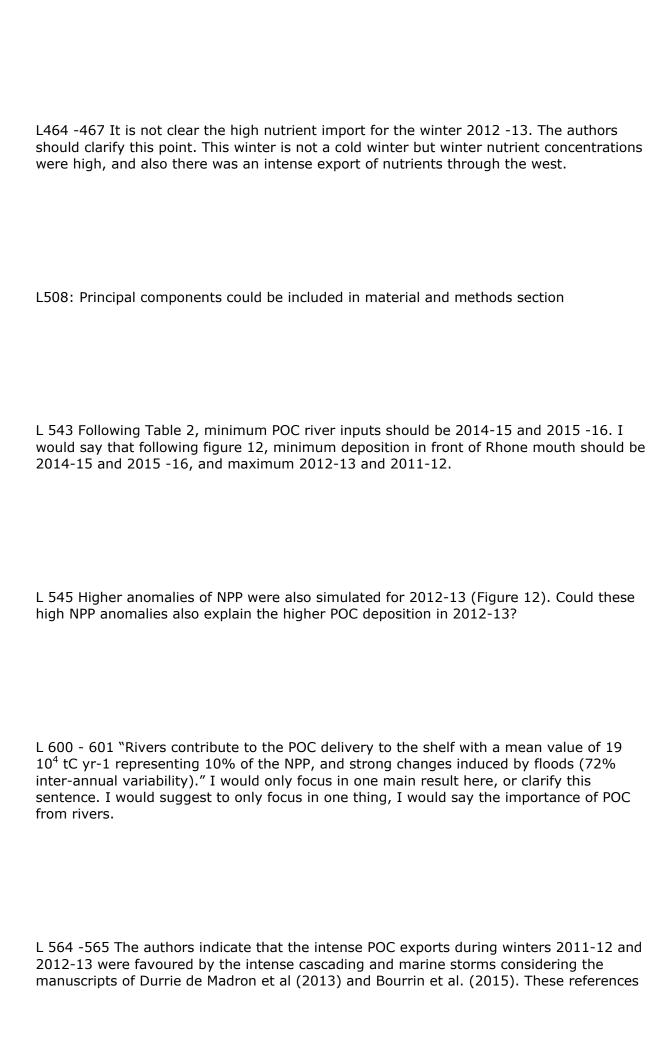
The manuscript is a significant contribution to biogeochemical modeling on continental shelves, and it has a lot of potential to predict biogeochemical – biological (production / respiration pelagic rates) conditions under future climate change scenarios. In spite of that, the authors do not explore this issue, or at least include a discussion paragraph about it in the manuscript. I think that the manuscript would greatly improve with some specific paragraph about their future modeling work, analyzing future biogeochemical consequences of the climate change.

I think that the authors should contextualize their manuscript. On one hand, the authors should formulate this manuscript in the context of their own future work, as explained



L264- 266, Figure 7 and Figure 10. It is not completely clear which sections are considered to calculate the volume transport. How deep are the sections, only to 120m or deeper? The depth of the sections should be indicated in this part.





correspond to field observations collected during in winter 2012 and March 2011. No other reference about the intensity of cascading and storms events are indicated for the other study years. Would it be possible to include another references with inte-rannual data of cascading and storms events for the entire study years of this manuscript? I mean since 2011 till 2016