This manuscript presents a newly coupled atmosphere-ocean single column model (AOSCM, CNRM-CM6-1D). It demonstrates the model's ability to simulate the diurnal cycle based on a case study during the Cindy-Dynamo campaign. The authors explore the dependence of skill in modeling the diurnal SST variability on coupling of the components and the coupling frequency. The manuscript is well written, coherent, and presents a relevant scientific contribution. It demonstrates the usability of the new AOSCM and points out several questions that can be investigated with it. I recommend acceptance upon a few minor edits. I list my comments below.

We acknowledge the anonymous reviewer for his/her very positive feedback. We reply to the comments in blue below.

L17 "This suggests that.." This sentence is not clear, please explain.

This sentence has been rephrased to clarify the idea.

L26/27 "either between parameterizations" -- "between parameterized processes" ? It might help the reader if you gave an example.

We have added a reference to Bhattacharya et al. (2018) which illustrated well the feedbacks in between parameterizations in an atmospheric model.

L47 suggest "as is the case in the the real.."

Done

Section 3.3 and 3.4 (and or Table 1) should mention nominal vertical resolutions and active parameterization schemes (i.e. KPP or TKE or ... in the ocean? schemes in the atmosphere?), and nudging / restoration time scales

We have added these pieces of information on lines 163-165 for the atmosphere and lines 196-200 for the ocean. Note that the restoring time-scale of the atmospheric forcing is already given on line 179.

L237 and 238 suggest removing "clearly"

Done

L296 suggest removing "It mean that"

Done

Table 2 / experiment Vadv: is the 0.1degree C cooling throughout the column? Across a level? Across base of the mixed layer?

We have applied a cooling term of 0.1°C throughout the column. We agree that it is not realistic but as the results were similar whatever the chosen vertical extent for this term, we decided to show the test using the most simple choice. We have added this clarification in table 2 and in the main text on line 232. Note also that this term is a cooling term whose origin is not stated (we cannot say whether it represents a vertical advection term or a horizontal advection). We have thus removed the term “vertical” in the table.

Fig 1 rotate epsilon in upward arrow

It is not an epsilon but an omega (the lagrangian tendency or air pressure, ie the vertical velocity in pressure coordinates). This has been clarified in the figure's caption and in the main text.

Fig 5 Why are the profiles shown in reference to ERA-Interim, and not as they are next to each other? Why not in reference to the R/V Revelle soundings that should be more accurate?

It is difficult to say that the observed local profile is more accurate than the ERA-Interim profile in this case. The atmospheric forcing method is representative of an area spanning a 50-km-radius disk centered around the R/V Revelle, while the soundings provide local measurements. Therefore, the comparison with local soundings would be unfair too. We agree that we could have used the sounding profiles as a reference for this figure, but given the large model ensemble spread, our conclusions won't be altered. Therefore, we did not modify the figure.

Fig 15c (and 16f lower part): is the significance correctly indicated here?

Yes, we have checked this. The significance is based on a student t-test which compares the difference in mean values to the standard deviations. As evidenced in figure R1, there is a footprint of the difference in the daily cycle phasing down to 100m, even if the difference is very weak.

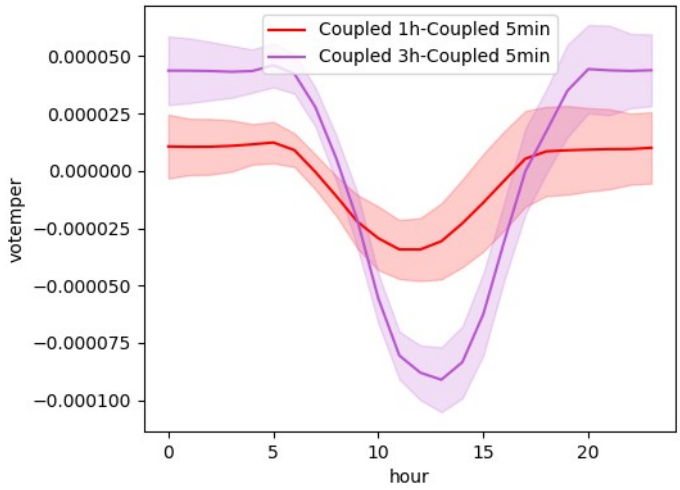

Figure R1: Change in mean daily cycle of ocean temperature at 97m depth between experiments with 1h and 3h coupling time step relative to a 5min coupling time-step.

Bhattacharya, R., Bordoni, S., Suselj, K., and Teixeira, J.: Parameterization Interactions in Global Aquaplanet Simulations, J. Adv. Model. Earth Syst., 10, 403–420, https://doi.org/10.1002/2017MS000991, 2018.