

Comments on the paper „The climate change signal in the Mediterranean Sea in a regionally coupled atmosphere-ocean model”

General comments

The paper describes simulations with a coupled ocean-atmosphere model with the interesting feature that the ocean is in a global set-up coupled to a regional atmospheric model. The analyses are interesting and the paper is generally very interesting for the scientific community.

The authors have been very patient and thorough in answering all my comments, it was a pleasure to read the authors response. I have only the additional comment that some points were discussed very nicely in the response where I wished to have an additional sentence in the document itself, i.e. the connection between SST and precipitation over the Black Sea. Maybe other readers have the same questions as I had and would be glad for an additional sentence.

I have still a question mark when it comes to the bias correction. Same here, it would be nice to have a bit of your explanation in the paper:

„Macías et al. (2018) apply the bias correction to the RCM atmospheric fields used as surface forcing in an uncoupled simulation with their ocean model. We cannot apply their approach to our coupled system. “

Why?

„However, we have identified the process at large (better: that are?) responsible for (the) ROM SST bias. We consider that this is also an important finding for improving ROM's performance. “

In your conclusion you wrote that the found biases are in the range of other biases reported and „However, there is place for further improvement in reducing certain biases (SST and MSLP) by isolating the causes through targeted sensitivity experiments. “

So when I understand your two sentences above right, you know already the sources of the bias and you can eliminate them to improve ROMs performance. Thus it would be great to have a statement like this in your conclusions.