Authors response

Reviewer 1

Manuscript:

Section 3.2: regarding my earlier comment on "globally": First, perhaps consider rewording "this is not available globally" by "this is not available for all CORDEX regions" or something similar. Second, it is still not clear to me how using a higher resolution product would not be "fit for the purpose of this study" (as stated in the manuscript), if it is a regional study for Switzerland? Is the 44 km resolution currently hardcoded into topoCLIM?

The method presented aims to be a global method based on datasets only available worldwide - we test the approach in Switzerland but envisage applications in much more data poor regions, hence why we use the 44 km over the only regionally available 11 km. The 44 km product is not hardcoded, the code can accept any CORDEX resolution.

We have changed the sentence as suggested and added some clarification for the second part of the comment:

"this is not available for all CORDEX regions, and therefore not fit for the purpose of this study which aims to be a globally applicable method based on datasets that are available worldwide."

L27: broken reference ("alias?")
Thanks - fixed.

L94: Replace colon after "All preprocessing of raw CORDEX data" by a hyphen (-> "All preprocessing of raw CORDEX data - … - is accomplished …")
done

L190: remove opening quotation mark
done

L192: remove double parentheses
done

Code:

The instructions for installing the package and running the example setup are now comprehensive and clear to follow. Only running the command Rscript -e 'install.packages("ncdf4","qmap," repos="http://cran.us.r-project.org")' results in an error; I had to change it to Rscript -e 'install.packages(c("ncdf4","qmap"), repos="http://cran.us.r-project.org")'. Furthermore the documentation contains some typos (e.g. "datsets", "writted").

- We have corrected the packages install line.

- We have corrected these typos and read through both readme documentations and script docstrings again.

The code cleanup and the introduction of comments and docstrings has improved the code a lot. Some parameters (e.g. (1) the lat/lon ranges in esgf_get.py or the (2) dates in qmap_hour_plots_daily_12.R) are however still hardcoded - ideally these should also be passed by the user, but at the minimimum you should add a remark in the documentation where/how to change them.

(1) These are actually indexes so have refactored the variables and added as arguments to esgf_get.py as follows:

ARGS:
cordex_domain (str): cordex experiment domain e.g. "EUR-44"
openid (str): Your openID as configured at ESGF e.g. 'https://esgf-data.dkrz.de/esgf-idp/openid/xxxx'
outdir (str): Path to write results to e.g. /path/to/results
xstartIndex (interger): Start index slice in x direction (left to right) to reduce array size for download
xendIndex (interger): End index slice in x direction (left to right) to reduce array size for download
ystartIndex (interger): Start index slice in y direction (top to bottom) to reduce array size for download
yendIndex (interger): End index slice in y direction (top to bottom) to reduce array size for download

(2) We have introduced a config file in “ini” format to hold the various date parameters. This promotes reproducibility as this file can be stored alongside results to reproduce results easily or be committed to a version control repository. This also permits additional parameters that could be added in future releases to be easily included. We have added a section in the documentation to describe how this works and defined the parameters.

Work on code for this revision corresponds to the following commits (24 Jan 2022):

cfaa7d5bb9cd9994ea661793407ff76c91524f13
bf43a4c35e595c13d9c449b2b3b277022a82dbf7
933221caf4af463dd5fa7c92bd68c3f121fad957

Editors comments

I, for my part, will ask you to make sure that your code & data availability section is up-to-date, in particular I think that the code DOI (and title!) may need an update to version 1.1 or similar.

We have created a new code repository with a new DOI on the WSL institutional data repository Envidat at https://www.envidat.ch/dataset/topoclim-v1-1-code. This is linked to v1.0 repository. The code availability section is updated with this new DOI. The manuscript title has also been updated to v1.1.