Geoscientific
Model Development
Discussions

# *Interactive comment on* "Global hydro-climatic biomes identified via multi-task learning" *by* Christina Papagiannopoulou et al.

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The work presented by Papagiannopoulou et al. in this manuscript is of interest for the reader of GMD and is also very relevant for the ecosystem and climate research community. Overall the manuscript is well structured and the methodology section generally well documented. Knowing that the focus of GMD is on the progress and novelty in computation and model development, I support the need for in-depth description of the MTL model and its performances (e.g. SLT vs MLT, capability to detect Granger causality, etc.). However I believe that the manuscript would be strengthened and results better supported if the authors could really demonstrate that the new product (i.e. map of hydro-climatic biomes) is outperforming other bioclimatic maps that did not consider in their design the vegetation response to climate variability.

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This is still lacking in the current manuscript. In addition some methodological aspects that led to the final design of the MLT and clustering should also be improved to backup the authors' statement on the performances of the final models and derived product. Based on these observations and on the detailed comments provided in the joint report I recommend the paper for major revision.

Please also note the supplement to this comment: https://www.geosci-model-dev-discuss.net/gmd-2018-92/gmd-2018-92-SC2-supplement.pdf