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| **Protocol**  Meeting Bachelor Thesis, FS 2024 | | | | | | | | | | | |
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| **Protocol-No.:** | 05 | | | | | **Project name:** | Bachelor Thesis | | | | |
| **Meeting type:** | Discussion | | | | | **Location:** | GIUB, Bern | | | | |
| **Date / Time:** | 01.05.2024 / 11:00 | | | | |  |  | | | | |
| **Topic / Goals:** | Global Modelling | | | | | | | | | | |
| **Lead:** | Benjamin Stocker | | | | | **Logger:** | Patricia Gribi | | | | |
|  | | | | | | | | | | | |
| **Participants** | |  |  | | **E-mail** | | | **Present** | **Excused** | **Distribution** |
| Prof. Benjamin Stocker | |  | GECO-Group | | benjamin.stocker@unibe.ch | | | x |  |  |
| Patricia Gribi | |  | Unibe | | patricia.gribi@students.unibe.ch | | | x |  |  |
|  | | | | | | | | | | | |
| **Items discussed:** | | | | | | | | | | | |
| 1 global Modelling | | | | | | | | | | | |
| **Next meeting:** | | | | **Attachments:** | | | | | | | |
| * 13.05.22/15.00 | | | |  | | | | | | | |

| *(Legend for type: D = Decision, P = Pending, I = Information)* | Typ | Resp.: | Date: |
| --- | --- | --- | --- |
| Modelling |  |  |  |
| * In specific coordinates within the grid, it is observed that values representing potential evapotranspiration (PET) exceed those denoting actual evapotranspiration (ET). This discrepancy suggests a potential error in the units somewhere, which needs to be identified and corrected. Comparative analysis between PET values and FLUXNET data revealed consistently elevated PET readings in relation to ET. Despite this observation, the underlying error within the dataset remains elusive. Consequently, an alternative methodology involving the conversion of PET values into mass units will be employed. This alternative approach will utilize the latent heat of vaporization derived from the "bigleaf" package, as opposed to employing the function cwd::convert\_et(). | P |  | 13.05 |
| * **patm:** standard value is taken | I |  | 1.05 |
| * **Resolution Adjustments:** Interpolation procedures have been discontinued, resulting in each day now possessing an identical monthly value. Although instances of missing data persist within the dataset, these gaps are presently left unaddressed, with plans for subsequent handling at a later stage. | I |  | 1.05 |
| * Clone repositories and install the required packages (map2tidy, tidync, multidyplr, vroom, readr) and binaries | P |  | 13.03 |
| * **global\_cwd:** created new repo for the global cwd data.   + **1.** **map2tidy:** The 'map2tidy' function will be utilized to extract longitude "stripes" across the entire time-series dataset. In the repository's 'analysis\_folder', we'll update the 'make\_tidy\_cmip6' function to work for all variables. This way, we can create tidy data frames for each longitude, covering the full time-series data.   + **2. cwd/pcwd function:** The vignette I created where the cwd and pcwd is calculated will be translated into a function in the new global\_cwd repo (currently called my\_cwd). This function should take as parameters et and prec and return the cwd and pcwd timeseries. | P |  | 13.05 |
| * **ilon:** is the longitude index | I |  | 1.05 |
| * **chunks:** chunks of the data are written to separate files, placed in a directory as specified by the argument **outdir** with file names specified by argument **fileprefix**. The chunks will be along longitudinal bands (single index in longitude, all indices in latitude). | I |  | 1.05 |
| * **ncores:** To parallelize the computation of the canopy water deficit (CWD) across different longitudes, each core will be assigned the task of processing a specific file. This concurrent processing strategy ensures that computations for each longitude are performed independently and simultaneously across multiple cores, optimizing computational efficiency. Specifically, one core will be allocated to process one file, while subsequent files will be assigned to additional cores in parallel. | I |  | 1.05 |
| Workflow |  |  |  |
| * saved extracted gridpoint data to files and added them to git repo | I |  | 1.05 |
| Questions |  |  |  |
| * What do with the cmip6 data it is not in scratch. Should I change it but I can’t…. |  |  |  |