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| **Protocol**  Meeting Bachelor Thesis, FS 2024 | | | | | | | | | | | |
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| **Protocol-No.:** | 06 | | | | | **Project name:** | Bachelor Thesis | | | | |
| **Meeting type:** | Discussion | | | | | **Location:** | GIUB, Bern | | | | |
| **Date / Time:** | 21.05.2024 / 15:00 | | | | |  |  | | | | |
| **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:** | | | | | | | |
| * xx.05.22/15.00 | | | |  | | | | | | | |

| *(Legend for type: D = Decision, P = Pending, I = Information)* | Typ | Resp.: | Date: |
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| Modelling |  |  |  |
| * **Potential Evapotranspiration Calculation:** An alternative methodology involving the conversion of PET values into mass units was employed. This alternative approach utilizes the cwd::pet() function, as opposed to employing the function cwd::convert\_et(). * **pet():** | I |  | 14.05 |
| * Installed all required packages and forked cwd\_global. | I |  | 14.05 |
| * **cwd\_global:** forked repo for the global cwd data and cloned it locally.   + **1.** **map2tidy:** The 'map2tidy' function is utilized to extract longitude "stripes" across the entire time-series dataset. It writes data to .rds files for each longitude index. In the repository's 'analysis\_folder', the 'make\_tidy\_cmip6' function was updated to work for all variables. This way, tidy data frames are created for each longitude, covering the full time-series data.   + **2. apply\_cwd\_global:** Creates a tibble containing the indices of longitudinal points to be processed. Partitions this tibble across multiple cores for parallel processing using the multidplyr package. Applies the cwd\_byilon function to each longitudinal index in parallel, reading data from the input directory, processing it, and saving the results to the output directory with a specified file prefix.   + **3. cwd\_byilon:** adjusted function for all the needed variables. Adjusted file paths.   + **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. | I |  | 14.05 |
| * **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 |  |  |  |
| * **Paths:** data still in my own folder under data\_download. What do with the cmip6 data it is not in scratch. Should I change it but I can’t…. | P |  | 14.05 |
| Questions |  |  |  |
| * We started by estimating S0 as the CWD at which vegetation ‘activity’ ceases. Why? In paper global patterns of water storage in the rooting zones of vegetation |  |  |  |