

R user meeting agenda and minutes

Add any topic you want to present or listen to the [Topic list](#)

5th February 2026
Hybrid (online and in-person)
R user meeting

Organizers: Victòria, Ariadna

Attendees: Carlos, Esther, Emily, Aleks, Marc, Javier, Paloma

Agenda

- Ice-breaker: dput() function
- NEWS:
 - General
 - New modules on Nord4
 - startR
 - New parameter 'transform_method_dim' for interpolation
 - s2dv
 - New function: TimescaleDecomposition()
 - CStools
 - New release CStools/5.3.1
 - Improvements in CST_QuantileMapping()
 - New parameter 'window_dim' in CST_Calibration()
 - CSIndicators
 - New release CSIndicators/1.2.0
 - CSDownscale
 - New release CSDownscale/0.0.2
 - esviz
 - New function: VizPolygonsMap()
 - New parameters for BarPlotCat()
 - SUNSET
 - Summary of features to be included in 3.2.0
 - User presentation: [Aleks Lacima]
- Q&A

Slides:

Minutes:

Aleks presented his work on the BarPlotCat() function in esviz and its integration into SUNSET, along with the use case he has created as a follow-along documentation example.

Organizers: Victòria, Ariadna, Theertha

Attendees: Núria, Helena, Maider, Carles, Ada, Paloma, Matias, Javier, Emily, Alberto, Ania, Verónica

Agenda

- Ice-breaker: How do you find R packages?: CRAN Task Views
- NEWS:
 - General
 - R-tools Roadmap 2026
 - s2dv
 - New function DieboldMarianoTest()
 - CSTools
 - Bugfix in CST_BindDim()
 - New function CST_ReorderDims()
 - CSIndicators
 - Vignette for the HeatIndex function
 - esviz
 - esviz/0.0.1 on CRAN
 - Display of points in bitmap-type images
 - SUNSET
 - New release 3.1.0
 - Visualization: crosses/dots on non-significant grid points
 - User presentation: New function HeatIndex() in CSIndicators [Alberto Bojaly]
- Q&A

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20260205.pdf

Minutes:

- When trying to find new R packages, most people rely on generative AI (9/10), search engines (8/10) or asking colleagues (7/10). Ania also mentioned that she often finds new packages by looking at other people's code. Most of the meeting attendance did not know about CRAN Task Views.
- Núria asked about planned releases for s2dv. There will be one in the coming weeks (needed for regridding with newer CDO versions) and also most likely another one further into the year. She also asked about plans to create CST_* wrappers for s2dv functions and adding them to the package. For now, the plan was to integrate these into CSTools, but we can reevaluate the strategy.
- Carles said GHR are looking to work with communications for a dissemination strategy for their packages (trainings, youtube tutorials, etc.) The R-tools unit would like to collaborate in this effort.
- After the presentation on the new CSIndicators::HeatIndex() function, Paloma asked Alberto about the best way to provide forecast information for the Heat Index in a plot when using forecast data with multiple ensemble members. He mentioned that, for

example, the probability distribution can be computed and it can be shown as the probability of exceeding a certain threshold.

4th December 2025
Hybrid (online and in-person)
R user meeting

Organizers: Victòria, Ariadna, Theertha

Attendees: Ania, Emily, Carles, Paloma, Daniela, Sara

Agenda

- Ice-breaker: ChRistmas Tree
- NEWS:
 - General
 - Packages on CRAN
 - startR
 - New release 3.1.0
 - s2dv
 - New release 2.2.1
 - New function TimescaleDecomposition()
 - CSTools
 - New release CSTools v5.3.0
 - CST_BindDim(): New parameter sort_dates
 - CSIndicators
 - New release CSIndicators v1.1.3
 - New Indicator HeatIndex()
 - esviz
 - New function ShapeToMask()
 - SUNSET
 - New release plan
 - Probabilities accepting absolute thresholds
 - Code for the CST briefing available in the master branch
 - User presentation: New package esviz [Ariadna]
- Q&A

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20251204.pdf

Minutes:

- Christmas tree icebreaker code can be found here:
https://gitlab.earth.bsc.es/es/rsenal/-/blob/main/Christmas/2025/Christmas2025.md?ref_type=heads
- We need a person to test the new TimescaleDecomposition() function in s2dv (developed by Javier)
- Carles asked about the possibility of integrating ggplot2 in the esviz functions in the future. It is currently not in our plans but it can be explored in the future if it becomes an important need for the department.

2nd October 2025
Hybrid (online and in-person)
R user meeting

Organizers: Victòria, Ariadna, Theertha

Attendees: Javier, Núria, Vero, Alberto, Daniela, Carlos, Paloma, Matías

Agenda

- Ice-breaker:
- NEWS:
 - General
 - Packages on CRAN
 - ClimProjDiags
 - New release 0.3.4
 - startR
 - Running Compute() on MN5/CTE-AMD
 - multiApply
 - New release 2.1.5
 - s2dv
 - New release 2.2.0
 - CSTools
 - New function AreaWeighted().
 - CSIndicators
 - New Indicator RNoughtIndices.
 - esviz
 - New function BarPlotCat()
 - SUNSET
 - New options for plots
 - User presentation: New function in CSIndicators [Javier]
- Q&A

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20251002.pdf

Minutes:

- Javier asked where to consult the documentation of the packages that are not currently available on CRAN. The documentation of each function is in the function file on GitLab, and also sometimes the PDF of the package manual is also there. If any PDF files are missing, let the package maintainer know and we can upload them.
- For esviz::BarPlotCat(), Vero suggested the possibility of adding a label showing “Skill < 0” with adjustable size for the plots with no skill, on top of the current transparency.
- RNoughtIndices() could have a vignette in CSIndicators in the future

5th June 2025
Hybrid (online and in-person)
R user meeting

Organizers: Victòria, Ariadna, Theertha

Attendees: Carles, Carlos, Daniela, Emily, Emma, Miguel, Nuria, Raúl, Sara, Tanmoy, Veronica, Yara

Agenda

- Ice-breaker:
- NEWS:
 - General
 - RStudio and Jupyter Notebook in Hub
 - startR
 - New release 2.5.0
 - multiApply
 - Apply(): Matching list names in input 'data' to parameters in 'fun'
 - easyNCDF
 - Minor release 0.1.3
 - s2dv
 - Difference between GetProbs() and ProbBins()
 - CSTools
 - New function CST_BindDim()
 - Implemented EvalTrainIndices in QuantileMapping
 - CSDownscale
 - Added examples for functions, in branch - example_update
 - esviz
 - Parameter standardization
 - SUNSET
 - New full cross-validation workflow
 - Mask extreme probabilities with RPSS
 - Loading module improvements
 - User presentation: BSC-ES infrastructure [Victòria]
- Q&A

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20250605.pdf

Minutes:

- Sara commented she was having some problems using Compute() with a conda environment on MN5, which is a new feature of the latest release of startR. Victòria said she would help her look into it.

3rd April 2025
Hybrid (online and in-person)
R user meeting

Organizers: Victòria, Ariadna, Theertha, Raúl

Attendees: Gio, Ania, Carles, Paloma, Carlos, Daniela, Nuria, Vero M., Emily, Eren, Sara, Matias, Camille, Ada

Agenda

- Ice-breaker:
- NEWS:
 - General
 - New infrastructure (Nord4 and BSC-Hub)
 - startR
 - Compute() with conda environments
 - Compute() on Nord4
 - s2dv
 - Fix climatology calculation when ref is null in RMSSS.R
 - CSTools
 - Improved function CST_SplitDim for s2dv_cube
 - CSIndicators
 - New release 1.1.2
 - esviz
 - New Hatching function
 - Fix map contour alignment in VizEquiMap.R
 - SUNSET
 - Improvements to orography correction
 - New function to plot extremes
 - New unit tests for visualization metadata
 - User presentation: Daniela Lührsén
- Q&A

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20250403.pdf

Minutes:

- Gio and Paloma commented that it might be interesting to use the leaflet package in future visualization developments.
- New infrastructure: Nord4 and BSC-ES Hub with their software stack are available in the Earth Sciences department. To use the Nord3v2 software stack in Nord4 requires loading some additional libraries and using the 'nord3_singu_es' wrapper before commands.
- New release of CSIndicators (v1.1.2) includes several bugfixes and is now on CRAN.
- Paloma will try out the new plot_extreme_probs() function in SUNSET for her next seasonal forecast.

Organizers: Victòria, Ariadna, Theertha, Raúl

Attendees: Javier, Emily, Ania, Giovenale, Nadia, Daniela, Eren, Paloma, Alba

Agenda

- Ice-breaker: R assignment operators
- NEWS:
 - General
 - R tools roadmap 2025
 - CONTRIBUTING.md files
 - CSTools
 - New function CST_Summary()
 - esviz
 - Development of caption and vertical color bar in VizEquiMap()
 - SUNSET
 - Fair vs. non-Fair Brier Skill Score
 - Visualization module improvements
 - New function to plot extremes
 - GHR packages
- User presentation
- Q&A

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20250206.pdf

Minutes:

- For CST_Summary(), Giovenale suggests that 'na_dim' could be a confusing name for the parameter to specify whether NAs should be shown by dimension. Alternative names could be 'na' or 'show_na'.
- Eren commented that he has finished the first version of a workflow for downscaling with full cross-validation for SUNSET, and it is ready to test if anyone is interested in working with it. The development is available in the dev-Downscaling branch.
- For the GHR packages, the structure and parameters of plotting functions does not necessarily need to be fully aligned with the esviz package. It would be good if the same data types are used and if the functions will commonly be used together, but otherwise, GHR has freedom to decide what works best for them.
- The packages 'testthat' and 'covr' are installed in the BSC-ES R modules in our machines.

Organizers: Victòria, Ariadna, Theertha

Attendees: Raúl, Giovenale, Emily, Alba, Paloma, Sara, Carlos, Aude, Núria, Eren, Ada

Agenda

- Ice-breaker: R package 'christmas'
- NEWS:
 - General
 - New R developer: Theertha Kariyathan
 - startR
 - Improve error message about missing dimensions
 - Possible deprecation of ecFlow as workflow manager
 - s2dv
 - RandomWalk bugfix
 - CStools
 - New methods to `.make.eval.train.dexes()`
 - esviz
 - Development of caption and vertical color bar in `VizEquiMap()`
 - SUNSET
 - Launching jobs on CTE-AMD and MN5
 - Downscaling module update
 - Documentation improvements
- R user survey
- Q&A

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20241212.pdf

Minutes:

- **R user meeting will now be every 2 months.** In the alternate months we will have user support hours.
- Regarding the deprecation of ecFlow, examples in the practical guide and in the use cases should be enough for people who need to learn to use Autosubmit.
- For esviz::VizEquiMap(), users prefer the caption to be below the colorbar instead of between the colorbar and the plot. One user also suggested that the caption text should be centered instead of aligned to the left.
- Even if few people stated that they found the SUNSET updates useful in the survey, some people commented that they appreciate hearing the news during the meeting even if they don't use the tool because improvements are often related to the other packages and they like staying up to date.
- Núria suggested using readthedocs to make some of the documentation more accessible/easy to find
- Code examples from past workshops and tutorials could be very useful for beginners, presentations are available in the wiki, we can make sure they are more visible.

7th November 2024
No meeting (slides only)
R user meeting

Organizers: Victòria, Ariadna, Theertha

Attendees: --

Agenda

- Ice-breaker: R package 'styler'
- NEWS:
 - General
 - New R developer: Theertha Kariyathan
 - startR
 - Improvement in error message: chunking along 'dat' dimension
 - s2dv
 - New release v2.1.0
 - MSSS() and RMSSS(): Use climatology as reference for full-field data
 - CSTools
 - New function CST_Bind()
 - CSIndicators
 - CST_PeriodStandardization(): Bugfix of dates parameter
 - CST_PeriodPET and CST_PeriodStandardization(): update for metadata parameters
 - esviz
 - VizForecastPDF() : updated to include multiple observations and improve plot styling
 - New mask parameter in VizEquiMap()
 - SUNSET
 - Launching jobs on CTE-AMD and MN5
 - New plotting option: masking significance
 - Bugfixes in plotting functions
 - Bugfix in aggregation module
- User presentation:
- Q&A
 - Do you find the multi_panel option useful for SUNSET plots? [Victòria]

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20241107.pdf

Minutes:

Organizers: Victòria, Ariadna

Attendees: Alba, Cristina, Andreu, Ada, Albert, Camille, Raúl, Núria, Eren, Aude, Javier, Vero, Nadia, Roberto, Sara, Daniela, Sophie

Agenda

- Ice-breaker: Git in RStudio
- NEWS:
 - General
 - Code style guide for contributions
 - startR
 - New release v2.4.0
 - Improvement in the flexibility of metadata retrieval
 - New sanity check for wildcard '\$var\$'
 - s2dv
 - RPS() and RPSS(): Allow probabilities as inputs for the fair version
 - CRPS() and CRPSS(): Add parameter na.rm
 - MSSS() and RMSSS(): Use climatology as reference for full-field data
 - CSIndicators
 - CST_PeriodStandardization(): Bugfix of dates parameter
 - esviz
 - ShapeToMask() vignette
 - SUNSET
 - Subseasonal data: Loading and Visualization
 - Access to gpfs data
- User presentation: Indicators module for SUNSET (Alba LI.)
- Q&A

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20240912.pdf

Minutes:

- Git can be used within RStudio for any repository.
- Núria asked if the Visualization module can generate plots with the output from the Indicators module in SUNSET. This is not available yet but we want to work on it.
- Roberto mentioned that the method to compute statistical significance in the ACC function is not correct for spatial autocorrelation. Carlos and Nadia have been investigating different options to implement another method, but nothing is ready yet. Roberto will open an issue about this topic, for now, a warning can be added to the function to alert users of this.

4th July 2024
Hybrid mode (online and in-person)
R user meeting

Organizers: Victòria, Ariadna

Attendees: Raúl, Eren, Javier, Nadia, Paloma, Núria, Sara, Daniela

Agenda

- Ice-breaker: The browser() function
Vignette:
https://earth.bsc.es/gitlab/es/rsenal/-/blob/main/r_user_meeting_scripts/browser_vignette.Rmd
- NEWS:
 - General
 - MN5 BSC-ES software stack
 - s2dv
 - Next release
 - esviz
 - Color bar boundaries in ColorBarContinuous()
 - SUNSET
 - Bugfix in daily data loading
 - Mean Bias and Spread-to-error Ratio significance
 - Hard-coded absolute paths
- User presentation: ShapeToMask() developments [Raúl C.]
- Q&A

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20240704.pdf

Minutes:

- No need to include a warning in ColorBarContinuous() for the case where the boundaries are non-inclusive.
- Reminder that VizEquiMap() already has a parameter named triangle_ends to specify whether triangle ends should be included.
- For the ShapeToMask() function, users should be able to adjust the area coverage with a parameter so that they can have control over which pixels are included in the mask for lower-resolution grids.

Organizers: Victòria, Ariadna

Attendees: Carlos, Sara, Nadia, Raúl, Alba, Albert, Eren, Núria, Vero M.

Agenda

- Ice-breaker: What do you use to write R code?
- NEWS:
 - General
 - Conda environment on MN5 (experimental)
 - startR
 - Start(): Retrieve correct time steps when time is across a file dimension and the time steps of the first files are skipped
 - Compute(): Allow chunking over inner dimension that is defined across a file dimension
 - s2dv
 - Significance testing in Bias() and SprErr()
 - N.eff for RandomWalkTest()
 - Inconsistent NaN values in Histo2Hindcast() when input data is missing
 - CSTools
 - CST_Start(): updated documentation and set “retrieve = TRUE” in example.
 - as.s2dv_cube(): added a specific error for when input object is startR_cube
 - esviz
 - Color bar boundaries in ColorBarContinuous()
 - SUNSET
 - New time aggregation module
 - Recipe template
 - Mask and/or dots for metric visualization
 - Choose the color of NA values in plots
 - Subseasonal in development
- User presentation: Data provenance for SUNSET workflows [Albert P.]
- Q&A

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20240606.pdf

Minutes:

- The most popular options to write R code are RStudio and VSCode
- About Histo2Hindcast(): NA padding with a warning is a good option for the bugfix in issue #117

- About ColorBarContinuous(): Some people say that two parameters (one for the lower boundary and one for the upper boundary) is more intuitive than one. Everyone seems to agree that the default behavior should be to make both the upper and the lower boundary inclusive.
- Q: Can we install our own packages on the MN5 conda environment? [Carlos]
A: The environment itself only has read permissions, but you can try to install the package in your own personal folder and load it from within the environment. If someone tries, please let us know if it works.

2nd May 2024

Hybrid mode (online and in-person)

R user meeting

Organizers: Victòria, Ariadna

Attendees: Núria, Aude, Carlos, Gina, Roberto, Paloma, Vero M., Giovenale, Raúl, Albert, Eren, Sara, Nadia

Agenda

- Ice-breaker: string manipulation in R
- NEWS:
 - General
 - Using Jupyter notebooks with R on the Hub
 - s2dv
 - CDORemap(): Error when interpolating from irregular grid to gaussian grid
 - CSTools
 - CST_MergeDims(): Dates returned as numeric values
 - CST_Start(): use startR functions without the explicit start:: namespace
 - esviz
 - Color bar boundaries in ColorBarContinuous()
 - SUNSET
 - Downscaling module: New methods and downscaling of the forecast
 - Scorecards: plotting 'enscorr' requires the use of the Statistics module
 - Visualization: option for visualization of subseasonal data
 - Autosubmit: username change
- User presentation: BSC-ES Infrastructure (Victòria Agudetse)
- Q&A
 -

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20240502.pdf

Minutes

- A few users asked about using RStudio in the Hub. Stamen is working on it but he doesn't know for sure whether it will be possible to install it.

- The CST_* functions are usually wrappers of other functions. To change only the data of an s2dv_cube and not the metadata, the lower level function can be used. For example, instead of CST_MergeDims(), one can use MergeDims().
- For the plotting functions in esviz, Núria and others think it would be optimal to be able to choose the inclusion/exclusion for the lower and upper bands of the colorbar.
- In SUNSET, the 4nn Downscaling method has been replaced by the 9nn. Eren says that it should be sufficient, but it is open to change if needed.
- Núria asks if the software on the hub has been tested. All of our R tools, including SUNSET, work well on the hub. From the hub we can also access our /home directory.
- There is only one hub available right now, with 32 GB of memory, but there might be more machines in the future. The hub should be used for debugging, not for memory-intensive work.
- Many things can't be tested currently because we don't have access to /esarchive from any of the HPC machines.

4th April 2024

Hybrid mode (online and in-person)

R user meeting

Organizers: Victòria

Attendees: Ariadna, Alba, Roberto, Raúl, Núria, Aude, Eren, Sara, Nadia, Javier, Diego Paloma

Agenda

- Ice-breaker: Checking available resources and memory in R
- NEWS:
 - General
 - Welcome Ariadna Batalla and Raúl Capellán
 - s2dv
 - New parameter 'return_mean' in RPS() and CRPS()
 - NAO(): Allow ftime_dim to be NULL if it is not used
 - CDORemap(): Error when interpolating from irregular grid to gaussian grid
 - startR
 - Minor correction to the documentation of Start()
 - CStools
 - CST_MergeDims(): Error when merging time dimensions if both have length > 1.
 - SUNSET
 - Release v2.0.0
 - Bug in Units(): transformation of monthly precipitation has been fixed
 - Changes in 'Scorecards' output format
 - New Statistics module
 - New Multimodel module
 - Changes in default plot format and new parameter Visualization:file_format
- User presentation: Scorecards (Nadia Milders)

- Q&A
 -

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20240404.pdf

Minutes

- Núria asks if we could include the `future::availableCores()` function in SUNSET to automatically detect the cores, and if it would work well with autosubmit. Victòria replies that it needs to be tested but, in theory, yes.
- Núria and Paloma ask about the possibility of using `CST_MergeDims()` without merging the metadata dimensions. `MergeDims()` can be directly used on the data array to accomplish this without modifying the structure of the `s2dv_cube`. `CST_MergeDims()` will change the metadata so that it stays consistent with the data.
- Nadia presented her work on the Scorecards and showed the possibility of using the function `VizScorecards` in the `esviz` package to create custom Scorecards for any type of climate data. Carlos has an example that he created for decadal data, it would be good to have the code somewhere public so people have an example they can follow.
 - An example of my scorecards can be found here (https://earth.bsc.es/gitlab/cdelgado/cdelgado_copernicus/-/blob/development_branch/EDPR/4_scorecards.R) The script is complex because it produces many different scorecards, but I could simplify it if needed
- All of the Scorecards parameters can now be customized in the SUNSET recipe.

1st February 2023
Hybrid mode (online and in-person)
R user meeting

Organizers: Eva, Victòria

Attendees: Javier, Alba, Nadia, Nuria, Paloma, Sara, Roberto

Agenda

- Ice-breaker: `ClimProjDiags::Subset()` + `CSTools::CST_Subset()`
- NEWS:
 - General
 - Future R Tools developments
 - s2dv
 - CDORemap corrections: Added tolerance in crop and correct decreasing latitudes error
 - startR
 - Reminder: 16 GB data size limitation
 - ClimProjDiags
 - New release 0.3.3
 - Bug in Subset
 - CSTools
 - New release 5.2.0
 - New function `CST_ChangeDimNames`
 - New section of use cases
 - Developments in `CST_SplitDim`
 - Bug in `CST_Subset`
 - CSIndicators
 - New release 1.1.1
 - esviz
 - Significance in `VizScorecards`
 - `ShapeToMask` area coverage ratio
 - SUNSET
 - Sample data and conda environment use case for external users
 - Bug in `Units()`: transformation of monthly precipitation
- User presentation: AeDES monitoring and prediction system (Javier Corvillo)
- Q&A
 - Next R user meeting [Victòria]

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20240201.pdf

Minutes

- The new R-health person will start on March 1st.
- There will be no R user meeting in March. The next one will be held on April 4th.
- Roberto asked if it is possible to give latitude and longitude values when subsetting an array using `Subset()` or `CST_Subset()`. It is not possible, although it could be implemented in `CST_Subset()` thanks to the `$coords` attribute of the `s2dv_cube`.

- Regarding the bug in the SUNSET Units module, Alba suggests not taking leap years into account in the unit transformation, provisionally, to avoid errors. Most likely, we will try to solve the entire bug directly. For now, the safest option is to forgo unit transformation.
- To see the potential dimensions and size of your data when using Start(), simply modify your Start() call by setting the 'retrieve = FALSE' parameter. The data will not be loaded into memory, but the dimensions and size will be printed out.
- Javier mentions that he plans to include his EnvSuitability() function and any other fitting developments in one of our existing packages.

14th December 2023
Hybrid mode (online and in-person)
R user meeting

Organizers: An-Chi, Eva, Victòria

Attendees: Carlos, Vero, Paloma, Nuria, James, Alba, Aude, Eren, Javier

Agenda

- Ice-breaker: citation
- NEWS:
 - General
 - Roadmap
 - New GitLab repo: Rsenal
 - Survey review
 - s2dv
 - CDORemap() nicer error message
 - Corr() output dimension fix
 - startR
 - Collect() on HPCs
 - CSTools
 - CST_SaveExp new developments
 - CSIndicators
 - New release 1.1.0
 - New SPEI Indicator functions
 - Bugfix in SelectPeriodOnDates
 - esviz
 - ShapeToMask efficiency improvement
 - Secure var_limits generation to avoid failure when all data are NAs
 - SUNSET
 - Loading blended tas-tos data
 - Multi-model pooled method
 - Use cases
- 
- Q&A

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20231214.pdf

Minutes

- Based on the results of the survey, one of the conclusions is that sometimes newcomers have a hard time knowing where to find the appropriate information about the packages and how to use them. It would be good if each group provided a document with an outline of the information they would like to give to newcomers. The R dev team can fill the document with the appropriate resources according to the outline.

Organizers: An-Chi, Eva, Victòria

Attendees: Giovenale, Albert, Aude, Daniela, Diego, Eren, Jaume, Javier, Nadia, Nuria, Remy, Paloma

Agenda

- Ice-breaker: lintr
- NEWS:
 - General
 - BSC Training (former PATC)
 - Be careful with R version difference
 - s2dv
 - abs_thresholds
 - CSTools:
 - New release 5.1.0
 - New release 5.1.1
 - Next developments
 - CSIndicators:
 - Change time_dim default value to 'time'
 - Corrected subset of 's2dv_cube' coordinates
 - Re-added ClimProjDiags dependency
 - Substitute CST_Load by CST_Start in vignettes
 - esviz
 - Does PlotVsLTime() create the wrong x-axis tick label?
 - SUNSET
 - Anomaly computation when hcst and obs grids are not equal
 - Autosubmit custom directives
 - New use case tutorial
 - 'corr' metric name change
- User presentation: vdiffR [Giovenale]
- Q&A

Slides:

https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:r_user_meeting_20231102.pdf

Minutes

- lintr: the configuration file .lintr can be put in an absolute path and by `options("lintr.linter_file" = "/home/.../.lintr")` you can use the config under wherever path.
- The BSC training slide on earth wiki:
https://earth.bsc.es/wiki/lib/exe/fetch.php?media=tools:day2_04_handson_r_tools.pdf
- vdiffR uses `testthat::expect_snapshot_file` inside, but provide more functionalities like interactive comparison.
- vdiffR is friendly for ggplot2 plotting, and it has different parameters for ggplot and base plotting functions.

- Not sure if the file extensions (svg, png, etc.) make a difference regarding the unit test, but .svg is the default of vdiff.
- Giovenale runs the unit tests on WS and his local and they perform the same at both places.

Organizers: An-Chi, Eva, Victòria

Attendees: Jaume, Veronica, Remy, Nuria, Bala, Paloma, Giovenale, Aude, Carlos, Nadia, Roberto, Eren, Diego

Agenda

- Ice-breaker: package “cli”
- NEWS:
 - s2dv
 - New release 2.0.0
 - obs doesn't need to have member dimension
 - Functions that use RandomWalkTest() to have test.type options
 - RPS and RPSS: NA threshold
 - startR
 - Use case of Autosubmit
 - CStools:
 - Accept spatial NAs in MultiEOF
 - Correct Calibration warning for ncores > 1
 - Correct PlotForecastPDF background in Nord3
 - Improve CST_SaveExp warnings and metadata
 - New function CST_Start: changes in the package
 - Next in CStools
 - CSIndicators:
 - New functions: CST_PeriodMax, CST_PeriodMin, CST_PeriodVariance, CST_PeriodMean
 - SUNSET
 - New logo!
 - Units: Allow unit transformation when fcst is NULL
 - Downscaling module
 - SUNSET launcher
 - Scorecards: plot Scorecards for multiple datasets
 - New plotting package
 - ShapeToMask new parameter and next developments
 - Name discussion round 2
- User presentation: randomForecast [Eren]
- Q&A

Minutes

- The name of the new package will probably be “esviz” and the function names that start with “Plot” will be changed to “Viz”. Any suggestion is still welcome for a couple of weeks, then we'll move on the process.
- Aude said that she got email from support the other day when using Compute(). It was probably due to an excessive requirement of the resource.
- CST_SaveExp() can't save time_bounds attribute right now.
- randomForest package is not in our environment yet. An-Chi will install it.
- capabilities() helps you check the available graphic device on the platform.
-

Organizers: An-Chi, Eva, Victòria

Attendees: Giovenale, Nuria, Bala, Aude, Jaume, Alba, Nadia, Carlos, Albert, Eren, Daniela

Agenda

- Ice-breaker: Name for new plotting package
- NEWS:
 - General R
 - issue template
 - New plotting package
 - New ColorBar function for discrete values
 - shp_mask() developments
 - s2dv
 - CRPSS ref = NULL no cross-validation
 - PlotEquiMap() plot all-NA array
 - startR
 - New release 2.3.0
 - Compute() with Autosubmit
 - Bugfix for integer selector
 - CStools
 - Add print method for 's2dv_cube' object
 - PlotMostLikelyQuantileMap()/PlotCombinedMap() new feature of color bars
 - CSIndicators
 - Add memb_dim to MergeRefToExp
 - SUNSET
 - Repository name change
 - New module: Units
 - New module: Scorecards
 - Plot enhancements
 - New function names
 - Presentation: R package "config" [Jaume]
 - Q&A

Minutes

[Ice-breaker] **Please Vote!!!**

- Name for the new package:
 - Acronym
 - PACS
 - CLIP
 - PICS: An-Chi, Victòria
 - picsR: Alba, Carlos, An-Chi, Victòria, Aude
 -
 - Two-word combination
 - s2dPlot

- ClimPlot
 - CSPlot: Núria, Carlos, Alba, Jaume, Eren
 - CSViz: Jaume, Bala, Eva, Aude (for the practical reasons we mentioned for the names of the functions)
 - (EsViz, esplot)
- Naming rule for the functions in the new package:
 - Original name: Núria
 - Plot+Projection, with first Capital letter, e.g., PlotRobinson, PlotEqui, PlotStereo, ...
 - Original name+2, e.g., PlotEquiMap2
 - Original name but change the first letter to lower case, e.g., plotEquiMap, plotRobinson
 - Remove "Plot", e.g., EquiMap: An-Chi
 - Other possibilities according to the package name
 - CSViz→VizEquiMap: Alba, Eva
- The information of using startR with Autosubmit as workflow manager is in practical guide:
https://earth.bsc.es/gitlab/es/startR/-/blob/master/inst/doc/practical_guide.md#4-3-3-compute-on-hpcs-with-autosubmit
- startR will create an autosubmit exp for you if you don't create one ahead. It will load autosubmit module automatically as well. See the details in the practical guide.
- CSScorecards gitlab is only accessible by people who have been granted permission.
- Shapefile function should provide the option of taking or not the nearest point if there is no intersection with adding a parameter. Giovenale and Alba mentioned that there is a function called 'extract' in raster that can be used to extract values at specific locations.
- PlotEquiMap() plotting all-NA array is just to be more user-friendly. It doesn't fail so if you plot many variables together, you can still get other plots instead of being interrupted and get nothing. SUNSET needs this functionality.
- The example in CSTools s2dv_cube "print" method uses the object from Load(), so it looks somehow different from the one from Start(). Other info stands for metadata from the NetCDF.
- SUNSET function name change may cause function name conflict, e.g., Calibration() in SUNSET vs. CSTools::Calibration. But it should not be a big problem because it's not needed using other individual functions while using SUNSET.
- The "config" and other configuration package (e.g., configr) can deal with different file formats and can write config files easily. But if these functionalities are not needed, simply save a list as a .R file should be enough.

Organizers: An-Chi, Eva, Victòria

Attendees: Núria, Àngel, Vero, Alba, Sara, Eren Albert M., Daniela, Lluís

Agenda

- Ice-breaker:
- NEWS:
 - General R
 - Corrected point intersection shp_mask
 - s2dv
 - Load(): parameter “grid”
 - Combine PlotStereoMap by self-defined layout
 - startR
 - Retrieve variable metadata when `retrieve = F`
 - Loading memory limitation on Nord3v2
 - Get dimension indices for each chunk when using Compute()
 - CSTools
 - Function CST_Start()
 - CSIndicators
 - New element time_bounds
 - Improvements on start and end parameters
 - Default value change of time_dim
 - SUNSET
 - New module: Indices
 - Presentation: Usecase of CST_PeriodSPEI [Alba]
 - Q&A

Minutes

- Àngel suggested the usage of a resampling methodology (<https://koalatea.io/r-resample-timeseries/>) to handle metadata in date-time averaging.
- The NAO time series plot is generated by a new function created by Carlos and it is in SUNSET now. It may be useful to include in a general package.
- Núria suggests testing startR memory limitation on MN4 to see if same problem happens.
- The new package for plotting function is agreed, but the details need to be further discussed. The general concept is, PlotRobinson() is surely included in the new package, and the rest plotting functions that serve different functionality from PlotRobinson() can be included. By any means, the process should be step by step without breaking compatibility immediately.
- The tip of knowing dimension indices during Compute() has two variations: including the parameters in function inputs (ex2_5) or not (ex2_14). I (An-Chi) personally suggest using the method in ex2_14 because it doesn't require you to know the details in startR code.
- Agreement to include CST_Start in CSTools, substitute all vignettes and examples and put a warning in CST_Load to not use it.

- Agreement to change the default value of `time_dim` to `time` for `CSIndicators`. Put a warning if `ftime` is used.

Organizers: An-Chi, Eva, Victòria

Attendees: Sara, Aude, Giovenale, Vero, Núria, Jaume, Alba, Javier, Nadia, Matias

Agenda:

- Ice-breaker: R classes
- NEWS:
 - General R
 - Package removed from CRAN
 - shapefile function
 - s2dv
 - PlotRobinson() update
 - CDORemap() ncores
 - startR
 - Bugfix when interpolating lon = 'all'
 - multiApply
 - Discussion: Should Apply() return attributes?
<https://earth.bsc.es/gitlab/ces/multiApply/-/issues/15>
 - CSTools
 - CST_SaveExp() new parameter startdates
 - PlotWeeklyClim() allow years outside the reference period
 - CSIndicators
 - New release 1.0.1
 - SUNSET
 - New name announcement
 - Multiple variables in one atomic recipe
 - Visualization module: New plotting options
- Presentation: CST_PeriodSPEI [Eva]
- Q&A

Minutes:

- Ice breaker reference about R classes S3, S4: <https://adv-r.hadley.nz/oo.html>. (An-Chi) Asked if it would be useful for our tools: we focus mainly on functional programming, so it's good that we don't mix FP and OOP. However it's good to understand how basic things in R are built in order to avoid specific errors like checking class() into base type objects.
- shp_mask(): Maybe it's useful to add a parameter to let the user define the id database, but it's difficult to generalize if different databases have different structure. It was asked if the user can provide directly the computed shapefile with the correct format (skip first part of the function). Some development: the intersection function from sf used inside have different options that can be studied because it affects how the intersection is made (centroid, percentage covered, ...)
- To test CDORemap with ncores in startR to see if it improves the efficiency
- To test if cdo -P on hub makes a difference
- For SPEI function, it would be better to have the unit transform part outside of the function, at least for the SUNET usage.

Organizers: An-Chi, Eva, Victòria

Attendees: Roberto, Nuria, Bala, Nadia, Carlos, Sara, Manex, Alba, Aude, Daniela, Eren

Agenda:

- Ice-breaker: reticulate
- NEWS:
 - General R
 - R community activity update
 - shapefile: use sf package
 - s2dv
 - RMS p-value
 - RPS, RPSS, ROCSS input to be probabilities
 - PlotRobinson.R progress
 - startR
 - New usecases (RainFARM, subseasonal)
 - CSTools
 - Standardized coordinates in 's2dv_cube'
 - CST_SaveExp output files name
 - Verification Suite
 - New output structure
 - Choosing plots
 - Disable unique ID in output folder
 - Skill module: cross-validation and climatology RPS
 - Hands-on: PlotRobinson()
 - Q&A

Minutes:

- Reticulate type conversions: <https://rstudio.github.io/reticulate/#type-conversions>. Using reticulate can be useful with plots like mapgenerator (<https://earth.bsc.es/gitlab/es/mapgenerator/-/wikis/how-to-use>).
- CST_SaveExp filenames: the filename by default is the start date coordinate or if it doesn't match with the accepted values, it takes the Dates. This can be inconsistent with monthly data. Also, Victòria pointed out that the start date is not the same as the first time step in Dates. Nuria proposed one possibility to improve CST_SaveExp default behavior by exposing some parameters of SaveExp regarding the filenames.
- PlotRobinson() is a good name? Since it can plot more than one projection. For now, we still stick to PlotRobinson() so we just need to guarantee it works well for Robinson. It makes sense somehow since there are hundreds of projection types and we can't promise they all work.
- PlotStereoMap() can plot just partial longitude? Need to check
- **PlotRobinson() can plot polygon on workstation!** It's just me (An-Chi) that can't make it (should be some local issue)

[Hands-on feedback]

PROBLEMS

- *E.g., Using projection xxx returns an error "..." [An-Chi]*

-

SUGGESTIONS

-

Organizers: An-Chi, Eva, Victòria

Attendees: Nadia, Albert, Jaume, Carlos, Nadia, Alba, Sara, Eren, Aude

Agenda:

- Ice-breaker: Memory profiling
- NEWS:
 - General R
 - R community meeting
 - ClimProjDiags
 - New release 0.3.1
 - Subset() priority for dimension names changed
 - Subset() input and output dimension names consistency
 - s2dv
 - New release 1.4.0
 - New function GetProbs()
 - Efficiency improvement of ProjectField() and RPSS()
 - NAO(): parameter "ftime_avg" can be NULL so no average is calculated
 - All functions (if applicable) have alpha = 0.05 and param/outputs "pval", "conf", "sign"
 - All dat_dim default is changed to NULL
 - startR
 - New release 2.2.2
 - Bugfix when the parameter is specified by a variable which is NULL + retrieve = F
 - multiApply
 - New release 2.1.4
 - CSTools
 - New release 5.0.0
 - CST_Subset
 - CST_InsertDim
 - QuantileMapping allows memb_dim to be NULL
 - Comments on Calibration developments
 - CSIndicators
 - New release 1.0.0
 - Verification Suite
 - Autosubmit
- User presentation: PlotRobinson.R [Nadia]
- Q&A

Minutes:

- We will send the signup webpage for the R community meeting as soon as they publish the information.
- What is the bad behaviour of using memory? How to know if the code takes a reasonable amount of memory or not? → It really depends on cases. If you think the script should be faster or lighter, find the problematic part and see if it can be

improved. For example, some functions require two or three times more memory than the input data size but it could be reasonable/inevitable.

- In the Verification Suite, Compute() is not used yet. We're preparing for that but we assume it will take some time.
- One thing we (with Bruno from CES MWT's help) try to do is to use Compute() with Autosubmit instead of ecFlow. But without that, we can still use Compute() sequentially. But there are still a few things to deal with.
- The file system in the Verification Suite now is only "esarchive", but we will have other systems and they will be separately listed in the configuration.
- Regarding PlotRobinsonMap.R:
 - Is the legend position changeable? Not sure, but it is doable supposedly.
 - The significant dots are for the non-significant points in order to not cover the color of the meaningful parts.
 - Should we put this function in s2dv? An-Chi prefers this because it can be in line with PlotEquiMap. Núria agreed to create a branch in s2dv at least for now so we can use it in the Verification Suite.
 - The function has some dependency that should be avoided? "rnatureearth" uses "sp" which is going to retire by the end of this year. One possibility is to use other packages to plot the coastlines (maps?)

Organizers: An-Chi and Eva

Attendees: Núria, Victòria, Jaume, Daniela, Nadia, Chloe, Veronica, Carlos, Bala, Manex, Sara, Alba, Albert, Eren, Roberto, Aude

Agenda:

- Ice-breaker: Fun package “cowsay”
- NEWS:
 - General R
 - R community activity
 - license change
 - s2dv
 - Cross-validation option in RPS(), RPSS(), and ROCSS()
 - startR
 - Bugfix for time attribute calculation when the units is “month”
 - ClimProjDiags
 - New release 0.3.0
 - WeightedMean
 - SelBox
 - CStools
 - PlotWeeklyClim
 - SaveExp
 - CSIndicators
 - Changes due to s2dv_cube
 - shapefile
 - New function to read shapefile and turn it into an array
 - retirement of rgeos and rgdal
<https://www.r-bloggers.com/2022/04/r-spatial-evolution-retirement-of-r-gdal-rgeos-and-maptools/>
- User presentation: PlotWeeklyClim() use case [Núria]
- Q&A

Minutes:

- The package “cowsay” in the ice breaker is installed in WS.
- Eva commented on the upcoming R conferences that some of them still don't have a closed date. Announced R Ladies/ R Barcelona community meet-up in BSC the 20th of April at 18.30. Asked for volunteers to present additionally to R tools (less than 1 hour).
- Aude suggested contacting BSC communication (maria.barroso@bsc.es) and the HR officer for gender equity, Nataly Bulson (nataly.bulson@bsc.es) in order that the event is noticed by all other departments in BSC.
- An-Chi announced a license change from Apache 2.0 to GPL-3 in all the packages following expected releases.
- An-Chi announced a new parameter in s2dv: cross.val that for RPS and RPSS in master; ROCSS in branch develop-ROCSS.

- Nuria commented that the function SaveExp was originally created to save only experiment data. Then, with the new changes that make the function more flexible, the name wouldn't be fully meaningful. However, we didn't decide to change it.
- Carlos suggested having "lat" and "lon" input for shapefile function so netCDF file is not necessary. It can help the efficiency too since the region is smaller. An-Chi will include these parameters in the function.
- Carlos also mentioned that for some cases, like crop categories, we may have two things in the same grid point. For this case, the output should have one extra dimension ("crop = 3", for example) and the value is always 0 and 1. But we don't have a case for now so we can consider this development in the future.
- Aude mentioned that we may be able to have a common place to store the shapefile we have and the ones used in ESMValTool. DDT people are aware of these shapefiles so we will reach a conclusion at some point.
- Nuria and Albert presented the origins of the code and some applications with PlotWeeklyClim. Albert said that he has new developments for the function to share such as adding thresholds to the plots.

2nd February 2023
Hybrid mode (online and in-person)
R user meeting

Organizers: An-Chi and Eva

Attendees: Núria, Victoria, Eren, Nadia, Daniela, Alba, Meriem, Albert M., Bala, Pep, Jaume, Sara, Carlos, Manex

Agenda:

- Ice-breaker: R-community
- NEWS:
 - s2dv
 - RMSSS() development
 - RandomWalkTest() development
 - CRPSS(): Cross-validation for climatological forecast
 - New function: ROCSS()
 - clim.palette(): new palettes
 - Vignettes
 - ClimProjDiags
 - Functions to accept non-numerical data
 - s2dv_cube object changes
 - What is an s2dv_cube?
 - s2dv_cube structure changes
 - Changes in functions
 - How to adapt the scripts
 - Element \$attrs\$Variable\$variables
 - CStools
 - Merged developments
 - s2dv_cube development
 - CSIndicators
 - s2dv_cube development
- User presentation: Scorecards [Nadia]
- Q&A

[Aude] Should we redo a poll to see if this schedule still suits the majority of people?
(At noon for instance, I'd prefer personally!)

Minutes:

- **Upcoming R conferences:**
 - useR!: (no news, past years took place during summer)
 - Barcelona R: Summer 2023 (tentative)
 - posit::conf(2023): Chicago from Sunday, September 17 - Wednesday, September 20, 2023.
 - Shiny in Production: 12th - 13th October 2023
- An-Chi and Eva will contact R communities in Barcelona to try to host a meeting. Nuria pointed out that there are also groups inside BSC such as Life that also use R and would be interesting to share experience with them. It is interesting to follow R international conferences. Nuria and An-Chi attended one useR! in 2021.

- s2dv: ROCSS function is already developed, tested by Alba and is missing the other test. No big issues.
- All colors in `clim.palette()` are color blind. Tool to check if your palette is colorblind friendly:
<https://davidmathlogic.com/colorblind/#%23D81B60-%231E88E5-%23FFC107-%23004D40>
- s2dv_cube developments: Nuria said that for the scripts it is not necessary to call `.KnownLonNames()` if the longitudinal dimension is called `lon[...]` because R is clever and it searches for the correct one. Inside functions it should be correct.
- The element `$attrs$Variable$variables` will be called `$metadata`. Although it is not the best option it is the most intuitive name.
- Nadia's scorecards: they will be available to everyone in an internal repository, maybe in the future it can be moved inside CTools or s2dv. Inside the verification tool will be included in the recipe and it can calculate either the skill score before or after the Tool. The provisional name could be `CSScorecards`, other proposals were `scorecards4cs`.
- No answers in the meeting room to the question of having read GRIB files.
- The user meeting will change to **12h**, still on Thursday every first week of the month.

Organizers: An-Chi and Eva

Attendees: Victoria, Aude, Roberto, Daria, Alba, Bala, Jaume, Pep, Carlos, Liam, Remi, Martin, Daniela, Lluís

Agenda:

- Ice-breaker: poll with two truths and a lie
- NEWS:
 - General R issues
 - Last meeting follow-up
 - R Roadmap 2023
 - Guideline for R-related questions
 - s2dv
 - CDORemap() bugfix
 - Corr() output `sign`
 - RMSSS() development
 - Trend() p.val bug
 - startR
 - new release 2.2.1
 - ClimProjDiags
 - new release 0.2.0
 - multiApply
 - Mind the warnings
 - CSTools
 - New release 4.1.1
 - Fixes in CST_Analogs(), PlotCombinedMap() and CST_Anomaly()
 - dat_dim parameter in (CST_)BiasCorrection and (CST_)Calibration()
 - CSIndicators
 - Two thresholds parameter
- User presentation: XMAS SPECIAL 🎄
- Q&A

Minutes:

- Aude said that the information in s2dverification GitLab is not fully copied to s2dv. An-Chi will take a look.
- The guidelines of reporting issues
<https://docs.google.com/document/d/1zRlmsRwFDJctDB94x6HGf6ezu3HFHhEjaBu0hVcrwTI/edit?usp=sharing>
- In file plot_ChristmasTree.R, setwd() should be removed.
- To plot the christmas tree without errors, R/4.1.2 is required.
-

Organizers: An-Chi and Eva

Attendees: Victòria, Alba, Núria, Aude, Carlos, Bala, Daniela, Remi, Nadia, Jaume

Agenda:

- Ice-breaker: package “clock”
- NEWS:
 - General R issues
 - Maintainers’ job distribution
 - Use RStudio-server on Nord3v2
 - PATC 2022: R tools hands-on
 - s2dv
 - New release 1.3.0
 - AbsBiasSS() significance test bug
 - Season() poor sanity checks
 - Unify the structure of functions with significance test
 - CSIndicators
 - New release 0.0.2
 - Sanity check correction in CST_ functions
 - Corrected documentation and examples
 - CSTools
 - New release 4.1.0
 - Improvements in functions: CST_BiasCorrection() and CST_QuantileMapping()
 - Bug in CST_Analogs()
- User presentation: log4r [Victòria]
- Q&A
 - Does Apply() use multiple nodes? [An-Chi]

Minutes:

- An-Chi will update the RStudio-server template on Earth wiki.
- Including real sample data in a package can be very heavy and cause the package size problem when it is submitted to CRAN. Saving the space to vignette is more practical. CSIndicators can just use the synthetic data in examples or go back to use CSTools data.
- The way to automatically create Roxygen2 format (80 char. max): (1) use IDE like RStudio (*One tip for achieving 80 character wide per line is to use "Ctrl/Cmd + Shift + /" (or from the menu, code | re-flow comment) in RStudio.*) or VSCode (2) package [formatR](#)
- The problem of sink(): need to close the connection or it causes problem; if you open many sink(), you need to close them all.
- About multiple node usage in Apply(), Núria thinks it is not possible due to the machine’s infrastructure. So even the packages “foreach” “parallel” used in multiApply claims to have multiple-node functionality, it doesn’t apply to our case.

Organizers: An-Chi and Eva

Attendees: Nùria, Martin, Alba, Aude, Carlos, Roberto, Jaume, Victoria, Bruno, Daniela, Nadia, Chung

Agenda:

- Ice-breaker: R tips;
<https://twitter.com/hadleywickham/status/1571603361350164486?s=20&t=CRUX3gCMyF8sWe61KNasyQ>
- NEWS:
 - General R issues
 - individual user meeting
 - Slack channel “r-tools”
 - RStudio server instability on Nord3v2
 - Plotting function house-cleaning
 - License change
 - s2dv
 - PlotLayout
 - PlotEquiMap
 - Corr() output change
 - DiffCorr sig test
 - startR
 - Corrected practical guide; Compute() config “extra_queue_params”
 - bugfixes about transform close to border
 - ClimProjDiags
 - WeightCells()
 - CStools
 - s2dv_cube
- User presentation: raster/malaria vignette [Martin]
- Q&A (you can put any topic here with your name)
 -

Minutes:

- Join WeightCells() discussion:
<https://earth.bsc.es/gitlab/es/ClimProjDiags/-/issues/10>. We need to decide the name (WeightedCells? LatCorrection?) and the methods.
- WeightedMean() use cos(lat) as weights, then calculate the grid area (dlat * dlon).
- Please let us know the in-house plotting functions you use (other than PlotEquiMap, PlotStereoMap, PlotLayout, PlotMostLikelyQuantileMap, PlotCombinedMap)
- We will try to add the feature of different map projection either use other R packages or insert mapgenerator.
- We will open an issue for the development of changing “conf.lev” to “alpha”. People can help us make the final decision there.
- In Compute(), wait = F still doesn't work well.

- <https://docs.google.com/spreadsheets/d/1P3SrDNrHaomc-vqAeYe7RI5AkqhdLE9UYX89Hu4e57g/edit#gid=0> Sign up the individual meeting here ;)

1st September 2022
Hybrid mode (online and in-person)
R user meeting

Organizers: An-Chi and Eva

Attendees: Chung, Alba, Victòria, Jaume, Pep, Martín, Raquel, Lluís, Nadia, Aude, Carlos, Albert, Núria

Agenda:

- Ice-breaker: RStudio::conf
- NEWS:
 - General R issues
 - s2dv
 - ClimProjDiags
 - startR
 - CSTools
- User presentation: CSIndicators [Chung]
- Q&A (you can put any topic here with your name)

Minutes:

[Quarto]

- The presentation today is made by Quarto. An-Chi made it by installing the software in her laptop, but it may be good to have it installed in workstation. Will ask Albert Vila.
- The file was published on RPubs (<https://rpubs.com/aho/936896>), a free platform for public web publishing. Aude suggested to create a place (server?) internally so we can store our presentation or document there. Will ask Kim and Albert too.

[User presentation]

- Question: The functions require month/day as inputs, and daily data is used. Can the function work with hourly data? → not sure
- When doing analysis, people use the original function more than using the CST_* one. The CST functions help preserve metadata but they're not mainly used during the data analysis process.
- Even I said in slide 10 that using easyNCDF or ncdf4 is easier for single file reading, but it has no problem using Load() or Start() to do so. From Aude's experience, it's easy to use Load().
- Now, many s2dv functions have 'dat_dim' parameter, while the default value is not consistent. Some of them are 'dataset', some of them are NULL. It is because we want to maintain backward compatibility. However, for the long-term saying, it is better to unify them. After discussing with Francesco, we decided to change all the default dat_dim value to NULL. Some warnings will be added to those who currently have 'dataset' as default in the next release.
-

Organizers: An-Chi and Eva

Attendees: Carlos, Jaume, Nadia, Núria, Basile, Victoria, Chung, Bala, Raquel

Agenda:

- Ice-breaker: some questions in zoom poll
- NEWS:
 - General R issues
 - s2dv
 - ClimProjDiags
- User presentation: s2dv_cube [An-Chi]
- Q&A (you can put any topic here with your name)
 - Make RPSS able to calculate for each dataset combination? Like Corr()
[Chung, An-Chi]
 -

Minutes:

[Ice-breaker]

1. What actions do you take when an error occurs while using R packages?

- Open an issue
- Review function documentation
- Revise script / Create your own functions
- See examples on GitLab (e.g., vignettes, use case)
- Ask someone

→4 out of 7 open an issue, which is the way we (as developer) like because it's easy to keep track of issues and it allows us to have more people involved if needed.

→Some people choose to revise the script or create their own functions. It is understandable and maybe faster to solve current problems. But it is not an encouraging way from developers' point of view since our tools lose a chance to be improved and probably other people also have the same problem. Even if you can solve the bugs on your own, it would be great reporting the problems to us.

→7 out of 7 people ask for help from others. It's nice to see a friendly community and reusable scripts :D

2. How long have you been using R?

- < 3 months
- 3 months to 1 year
- 1 to 3 years
- > 3 years

→The distribution is evenly spreaded more or less. We have a couple of experienced users and some newbies.

3. Which packages use s2dv_cube?

- s2dv
- startR
- CStools

- CSIndicators
- ClimProjDiags
- What is s2dv_cube?

→A few people don't know what s2dv_cube is (so the presentation helps :D) and several people chose s2dv. The correct answers are CSTools and CSIndicators. s2dv doesn't use s2dv_cube actually. The naming has a historical reason but is misleading now indeed.

- In ClimProjDiags, there is a function called ArrayToList <https://earth.bsc.es/gitlab/es/ClimProjDiags/-/blob/master/R/ArrayToList.R> can transfer an array to a list, and it has more functionality than the base function asplit(). For example,

```
> dim(dots): [month = 12, latitude = 180, longitude = 360]
> dots <- asplit(dots, 1)
> special_args_list <- vector('list', 12)
> special_args_list <- lapply(1:12, function(x) {special_args_list[[x]] <- list(dots = dots[[x]])})
```

Can be changed to:

```
> datalist <- ClimProjDiags::ArrayToList(dots, dim = 'month', level = 'sublist', names = 'dots')
```

- Carlos will create the function ShiftLon() and An-Chi will review it
- An-Chi will create the function WeightedCells() and Núria will review it
- The structure of s2dv_cube is not so suitable for the recent use cases. For example, the attributes should be there for each dimension. And the attribute names are not aligned with dimension names all the time (e.g., attribute named “lon” but dimension name is “longitude”). We may adopt xarray's method. We will have another meeting on this issue.
- Chung raised an issue about RPSS cross validation. He will discuss with Raul.
- RPS and RPSS can have dat_dim if there are multiple datasets, like what Corr() has now. Put it in the todo list.