

## ATMOSPHERIC FIELDWORK ASSIGNMENT

DEADLINE FOR SUBMISSION: 3<sup>rd</sup> May 2023 (12 midday)

For your case study country, download daily data for a period of 10 years and perform the following assessments using Python Xarray.

1. Compute the monthly rainfall totals and compute their longterm climatologies for each month.
2. Also, compute the annual totals and average across the country. Produce a timeseries that provides information on the year-to-year changes and trends.
3. Compute the number of dry ( **$RR < 1mm$** ) and wet ( **$RR \geq 1mm$** ) days (per month and per year) for your case study region and present a spatial and timeseries visualization of the output.
4. Perform similar analysis as Item 3, but for extreme rainfall indices ( $RR > 10mm$ ;  $RR > 20mm$ )

In a scientific report format, discuss your findings from the analysis performed. Your report should be categorized as such:

- a. Introduction (including Background, main and specific objectives, and research questions)
- b. Description of study area and dataset
- c. Methodology (Analysis Methods)
- d. Results and Discussion
- e. Conclusion
- f. Appendix (which must include your code; highlighting their output)