# File and folder structure for the SWAT course

This is description of the folder and file structure for the "How do I use satellite and global reanalysis data for hydrological simulations in SWAT?" workshop in Montevideo between 7 - 11 August 2017, jointly organised by the University of Sydney, IRI (Columbia University) and INIA, Uruguay.

**Folders**

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| **Main folder** | **subfolder** | **Content** |
| Background\_documents |  | A few useful pdf documents, such as the SWAT-CUP manual and the HydroPSO vignette |
| Documents |  | All the main documents related to the workshop |
| CourseAugust2017 |  | A folder with several subfolders related to a specific course taught at IMFIA (UdelaR) in August 2017 |
|  | DailySummarySlide | Powerpoint slides presented at the beginning of each day in course, summarising the day and the learning of the past day. |
|  | RscriptsDuringCourse | Specific Rscripts related to the activities during the different days of the course |
|  | Willem's older Teaching Documents | A document from teaching at the University of Sydney which discusses the implementation of land use scenarios in SWAT |
| Original data |  | Folder with all the input data related to the course. There are several subfolders related to the different subcomponents. These have been reorganised, so paths in R scripts need to be checked carefully |
|  | Metadata | Description of the metadata of the data files |
|  | ParameterFiles | SWAT-CUP and HydroPSO example parameter files |
|  | weather | All Uruguayan weather data |
| functions |  | R scripts and functions related to the different activities described in the documents throughout the course. Some of the scripts might seem unrelated as they are related to the hydroPSO application which we did not get to during the course and is unfinished |
| MODIS |  | Folder with downloaded MODIS ET data for the Cotter and Santa Lucia catchments |
|  | Cotter | MODIS ET (16A2) data for the Cotter catchment associated with the centres of the ARCSWAT subbasins |
|  | SantaLucia | MODIS ET (16A2) data for the Santa Lucia catchment associated with the centres of the ARCSWAT subbasins |

Files in the main (root) folder

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| **File** | **Description** |
| AA\_README.docx | This file |
| AA\_README\_Flowdiagram.pdf | A flow diagram of how all the documents in the course are related to each other. |

Files in the Documents folder

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| **File** | **Description** |
| A\_UruguayIntroductionToR.pdf | An introduction into R focussing on hydrological model (GR4J) calibration using hydromad |
| B\_RainfallRunoffCalibrationWithET.pdf | An example of how to use the MODIS16A2 evapotranspiration to calibrate a rainfall runoff model (GR4J) |
| C\_Basic\_SWAT-CUP\_CourseNotes.pdf | Notes on how to setup SWAT-CUP to calibrate an ARCSWAT or QSWAT model using the SUFI2 and PSO routines |
| C1\_WaterbalanceCheckSWATInput.pdf | An example of how to check the water balance of the SWAT input data to do a “sanity” check on the hydrological inputs. |
| C2\_MultipleVariables\_SWAT-CUP\_CourseNotes.pdf | Examples of how to implement multi-objective calibration using multiple flow stations, MODIS ET data, or nutrient data in SWAT-CUP with the Santa Lucia catchment as an example |
| D\_CreatingSWATCUPobservedData\_simplified.pdf | An ancillary document with examples of how to create SWAT-CUP input files for multi-objective calibration with different input data sets using R |
| E\_ExtractingETCalibrationSWATCUP.pdf | An ancillary document with examples of how to extract simulated ET data from SWAT and how to check the calibration of the model using observed and modelled data |
| F\_SettingUp\_hydroPSO.pdf | A document with a very basic outline how to set up hydroPSO to calibrate SWAT. This file is incomplete |
| ExtractMODIS\_SLucia.pdf | An example file of how to extract the MODIS16A2 ET data using the package MODIStools in R |
| G\_DownloadingAndManagingChirps.pdf | A document outlining how to download CHIRPS data using different methods ranging from manually from the website to automated through scripting |
| H\_BasicRainfallAnalysisINUMET.PDF | Methodology to analyse and compare different rainfall stations in an area, in this case from INUMET in Uruguay |
| H1\_BasicRainfallAnalysisCHIRPS.PDF | Methodology to analyse and compare different CHIRPS data grid locations, in this case for a catchment in Uruguay |
| H2\_ComparativeAnalysisChirpsInumet.pdf | A preliminary document to do a comparative analysis in time and space between CHIRPS and station data for a comparison catchment in Uruguay. |