**WaPOR Reference Evapotranspiration Validation Exercise**

In this exercise, you will validate WaPOR RET data at Tal Amara station in Lebanon (Latitude: 33.86305, Longitude: 35.99086). You will practice converting reference data (i.e., hourly net radiation, temperature, relative humidity and windspeed) to reference ET using FAO56 method and compare this to WaPOR RET layer.

**First, download the data provided for this exercise from the OCW.** This spreadsheet includes

* Hourly climatological data for the Tal Amara station in Lebanon for the year 2016

**Task 1: Calculate daily hourly net radiation, temperature, relative humidity and windspeed**

* Add four columns to the spreadsheet where you will be calculating the 24hr values of the climatological data: Solar24, T24, RH24, u24.
* For net radiation, relative humidity and windspeed the 24hr value is the average over the preceding 24 hrs.
* For Temperature the value is the average of the minimum and maximum temperature observed in the 24hr (FAO56)

$$T\_{air,24}=\frac{T\_{max}+T\_{min}}{2}$$

* Calculate these values for each 24 hrs

**Task 2: Use the calculated daily values in the FAO56 equation**

* Obtain the FAO56 excel file from the OCW platform
* Copy or create lookup for the daily values for Solar24, T24, RH24 and u24 into the excel file and calculate reference ET.
* The excel file uses the FAO56 method for estimating ETref ([Allen et al., 1998](https://www.fao.org/3/X0490E/x0490e00.htm#Contents)):



**Task 3: compare RET data from station and WaPOR**

* Download WaPOR RET data for the Tal Amara station
* Compare the two time series (see precipitation exercise for instructions)