

ICBMbaseprograms

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****ICBM – THE WEAPON OF MASS DESCRIPTION****

There was a need for a baseline/mother program for the re_{clim}/r_e calculations since there are some different versions circulating. Also for ICBM base version and as simulation (e.g., with i and r_e as driving variables). Therefore Thomas Kätterer and I collected mother programs for ICBM. These can be downloaded from www.oandren.com/ICBM.

There are programs in R and in SAS:

ICBM_function_2.R, Basic ICBM with constant parameters. Uses R definition of functions and plots nice fig.

ICBM_mother_sim_func_4.r, ICBM as simulation with i and re different every year (or day) – reads 'Ult1970.txt' and uses daily re from this file, with Swedish weather and re NOTE: v.3 had serious bugs – rerun with this one. Now with ICBMsim defined as function.

re_mother_v2.sas, the current version of calculating re from climate data, including when Et_0 is not measured (Penman-Monteith). See Allen et 1998, *Crop evapotranspiration - Guidelines for computing crop water requirements - FAO Irrigation and drainage paper 56*. Many other options there. Reads 'Ult30yr_SAS_re.txt'.

re_mother_v2.R, the current version of calculating re from climate data. Reads 'Ult30yr_SAS_re.txt' or equivalent file.

Et0calc_function_Swe_3.R, Calculates Et_0 from other meteorological variables when pan evaporation missing, according to Allen et 1998, *Crop evapotranspiration - Guidelines for computing crop water requirements - FAO Irrigation and drainage paper 56*. Many other options there, but only gives rough estimate-needs calibration against pan. Reads 'Swedclim.csv'.

And some data files for these:

Ult30yr_SAS_re.txt – Weather data from 30 years in Sweden – used for calibration

Ult1970.txt – One year weather data from Sweden

Excel files:

Excel_Mother_ICBM_1.xlsx, the current version of base ICBM for Excel. Good for exploration.

Excel_mother_reclim_5.xlsx, the current version for calculating re_{clim}/re from weather data. The Excel file for calculating re_{clim} has some flaws and may be replaced soon. Use SAS or R for safer results.

Excel_ICBM_mother_1.xlsx, ICBM as simulation with i and re different every year (or day)