HydroCalculator 1.04 Batch conversion

for updates check the website: http://hydrocalculator.gskrzypek.com

The Hydrocalculator version 1.04 allows to change C_k parameter, the kinetic fractionation constant. As default for surface water evaporation commonly is used 12.5‰ for δ^2H and 14.2‰ for δ^{18}O (Gonfiantini, 1986; Araguas-Araguas et al., 2000), advanced users may want to use different values for unique case studies.

General description

This is an advanced batch conversion option allowing processing simultaneously several data records. The input data table has to be prepared in advance following the template file provided (inputdata.csv). The batch conversion is returning results for both steady state and non-steady state models; it is up to the users to determine which one is applicable to their data record.

1. Select an input data file prepared following template inputdata_104.csv
2. Press calculate batch
3. Select folder and name for saving the output file

Batch conversion template

Do not alter the heading line with descriptions in the inputdata.csv.

Input data

opc - option for δ_A determination:

1 – measured in the field, 2 – based on rain only, 3- based on rain and LEL;

T (temperature °C);

h (relative humidity as a fraction);

d2HP - δ^2H_P; d18OP - $\delta^{18}O_P$;

d2HL - δ^2H_L; d18OL - $\delta^{18}O_L$;

d2HA - δ^2H_A (if known); d18OA - $\delta^{18}O_A$ (if known);

d2HR - δ^2H_{Rain}; d18OR - $\delta^{18}O_{Rain}$;

CkH - the kinetic fractionation constant, default for surface water evaporation is 12.5‰

CkO - the kinetic fractionation constant, default for surface water evaporation is 14.2‰

LEL - slope of Local Evaporation Line (if known)

Output data

Result_EI_H – *E/I* results for steady state model based on δ^2H

Result_EI_O - *E/I* results for steady state model based on δ^{18}O

Result_f_H – *f* results for non-steady state model based on δ^2H

Result_f_O - *f* results for non-steady state model based on δ^{18}O

d2HA - ambient air moisture for δ^2H; d18OA - ambient air moisture for δ^{18}O;

EkH - ε_k for δ^2H; EkO - ε_k for δ^{18}O;

EplusH - ε^+ for δ^2H; EplusO - ε^+ for δ^{18}O;

EH - ε for δ^2H; EO - ε for δ^{18}O;

CkH - constant for δ^2H; CkO - constant for δ^{18}O;

aH – α^+ for δ^2H; aO - α^+ for δ^{18}O;

dstarH – δ^* for δ^2H; dstarO – δ^* for δ^{18}O;

mH – *m* for δ^2H; mO – *m* for $\delta^{18}O$;

x – adjusting parameter

opt - ambient air moisture option selected by user;

comment - additional information entered by user

For full description of the variables please refer to Table 1. in Skrzypek et al., 2015.