Documentation errors: Hydrologic Model J2000 – JAMSWiki

<http://jams.uni-jena.de/jamswiki/index.php/Hydrologic_Model_J2000>

**-GUI**

**-Soilwater**

The following are incorrectly defined inputs:

MaxInfSummer[mm]: maximum infiltration during summer period

This parameter, actually soilMaxInfSummer, is a dimensionless coefficient in the equation for maxInf during the summer period (May through October).

Equation from the code: maxInf = (1 - run\_satSoil1) \* soilMaxInfSummer \* runkf\_h[0] \* run\_area

MaxInfWinter[mm]: maximum infiltration during winter period

This parameter, actually soilMaxInfWinter, is a dimensionless coefficient in the equation for maxInf during the winter period.

Equation from the code: maxInf = (1 - run\_satSoil1) \* soilMaxInfWinter \* runkf\_h[0] \* run\_area

MaxInfSnow[mm]: maximum infiltration with snow cover

This parameter, actually soilMaxInfSnow, is a dimensionless coefficient in the equation for maxInf when there is snow cover.

Equation from the code: maxInf = soilMaxInfSnow \* runkf\_h[0] \* run\_area

MaxPerc[mm]: maximum percolation rate

This parameter, actually soilMaxPerc, has units of cm/d and is used in the equation for maxPerc. Note that it is normalized by 86.4cm/d, which is defined as the “middle” hydraulic conductivity.

Equation from the code: maxPerc = soilMaxPerc \* run\_area \* runkf\_h[hor + 1] / 86.4

Not discussed in the documentation here, but maxPerc to the groundwater is computed similarly with the parameter geoMaxPerc being equivalent to the soilMaxPerc parameter for flow between soil layers.

Equation from the code: maxPerc = geoMaxPerc \* run\_area \* Kf\_geo / 86.4

**-Calculation of Evapotranspiration**

**-Specific Adaptation of Evaporation during the Modeling**

Reduction factor for evaporation

f(Ө) = ӨMPS/linear\_reduc if linear\_reduc < ӨMPS

This condition for the equation is incorrect and should be if linear\_reduc > ӨMPS, otherwise the actual evaporation would exceed the potential evaporation.

**-Soil Water Module**

Inf = (1 – soilsat) maxInf [mm/d]

This equation is incorrect. Infiltration is first computed by the water available for infiltration and then is set to maxInf if it is greater than maxInf.

run\_infiltration = run\_inRain + run\_inSnow + run\_snowMelt + run\_actDPS

if (maxInf < run\_infiltration) {

//System.out.getRuntime().println("maxInf:");

double deltaInf = run\_infiltration - maxInf;

run\_actDPS = run\_actDPS + deltaInf;

run\_infiltration = maxInf;

}

maxInf is defined by the equations given earlier for summer, winter, or snow.

There is also a typo in the text after the equation for LPS2MPS. “The calibration parameter Dist coef …” should be changed to “The calibration parameter Diffcoef …”.