

Interactive comment on “Improved SWAT vegetation growth module for tropical ecosystem” by Tadesse Alemayehu et al.

T. Brussée

t.j.brussee@hotmail.com

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General reflection:

I liked reading your paper very much, I think your assumptions given for your theory on LAI behaviour are valid and an added value to the SWAT model. They align with my findings on the weaknesses of SWAT in modelling in the tropics.

What is your opinion on how SWAT calculates the maximum transpiration using the Hargreaves or P-T method, at times when the LAI > 3? Is it realistic that the maximum transpiration remains equal when the LAI is 3 and when the LAI is 4? I refer to the formula for calculating maximum transpiration as you also give in eq.5 of Alemayehu et al (2015):

C1

$E_t = E'_0$ if LAI > 3.0 (m²/m²)

I found it very interesting that you initiate the LAI by using the ratio of P to PET, instead of soil moisture and reading the argument this is a good alteration to what Strauch and Volk (2013) did in their research. Also nice that SWAT-T can better account for climatic variations.

Please see the supplement for further comments by line.

Please also note the supplement to this comment:

<http://www.hydrol-earth-syst-sci-discuss.net/hess-2017-104/hess-2017-104-SC1-supplement.pdf>

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., doi:10.5194/hess-2017-104, 2017.

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