

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

Anonymous Referee #1

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In this manuscript, the authors modify the phenology algorithm of SWAT in simulating tropical vegetation. This work provided some interesting discussion of limitations in SWAT plant module. I have several major concerns about this work. First, writing of this work should be further improved to make it publishable. Second, organization of the introduction and method sections should be changed following requirement of a scholarly journal. line 47, what does this mean? do you mean that SWAT could not represent changes deciduous forest? line 55, extra space. line 58, for -> of. to simulate line 59, a rainy season line 67-68 this sentence should be moved to the method section line 71-81, I expected to see objectives of this work, but the authors are describing their methodology, which should be moved to the next section (method) line 92, a long rainy season line 93, across what? section 2.2.1 was copied from the SWAT manual. I suggest to condense this part significantly, or move it to a supplementary

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section line 172-173, this is not correct. Kill and dormancy are totally different. If some one use this to regulate phenology, they must have made mistakes. line 175-181, these discussions should be presented in your Introduction, or the Discussion section line 183, what are the data source of P and PET? line 192-193, remove these two sentences line 201-207, do you have any reference to support your rules? line 238, a ... site? line 242, why lai of 1.5 is removed? line 245, what break? line 253-254, I do not understand how the LAI patterns match precipitation.

line 259-260, awkward expression. consider to improve line 270, change the term 'flow' to stream flow or river discharge through out the manuscript line 272-273, remove the second period line 285, seasonality of what? line 290-291, I am not convinced that lai reflects changes in rainfall. you need to provide some statistical information here. and what about the correlation between temperature and lai? line 306-308. very confusing line 311 figure 5 only show two land covers. What about the other two? line 316. I do not see seasonal variation from figure 5 line 325, in October line 328, was, first line 329, second line 330, a 8-day scale line 339-341. do not understand what does this mean line 344, consider to revise line 351-353, not clear. consider to revise line 361, I do not see improvement in runoff line 387-389, remove this sentence line 396-406. It is surprising that the authors did not evaluate SWAT ET simulations line 412. Is this a sentence?

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