

## ***Interactive comment on “Improvement of the SWAT model for event-based flood forecasting on a sub-daily time scale” by Dan Yu et al.***

### **Anonymous Referee #2**

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General Comment: I would expect that in 2017 SWAT modeller would use the newest version of SWAT 2012 especially as next year SWAT+ a new generation of the model will be presented. However I can understand that simpler structure of the 2005 version is easily manageable and modified when you start with this kind of research.

Introduction P3, L13-14: Please better justify selection of SWAT 2005. Current justification is not satisfactory. 2.2 Model dataset P4, L18-21: I am surprised that you used Weather generator. That is really rare. The area is very large I would expect to have at least some data. Did you also use it for precipitation? And why data back to 1979 if you're modelling period 1991 – 2010. How did you model land use management (.mgt) where did you obtain the data. Please add table with data used in the model. For example refer to this manuscripts: Glavan, M., Ceglar, A. and Pintar, M., 2015. Assessing

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the impacts of climate change on water quantity and quality modelling in small Slovenian Mediterranean catchment - lesson for policy and decision makers. *Hydrological Processes*, 29(14): 3124-3144.

3.1 Development of. . . P5, L4: If you are following the method proposed by Jeong et al. (2010) please describe why and for what purpose was it made or used.

3.3 Model calibration Please introduce table with parameters used in calibration. Include also default value, range, final value. For example refer to this manuscripts: Glavan, M., Ceglar, A. and Pintar, M., 2015. Assessing the impacts of climate change on water quantity and quality modelling in small Slovenian Mediterranean catchment - lesson for policy and decision makers. *Hydrological Processes*, 29(14): 3124-3144. This manuscript should also be part of introduction or discussion chapters as it clearly describes the process that need to be followed while using SWAT model. Please clearly describe what the scenarios were. I assume you had three scenarios as follows out from Table 3 where you presented for certain version (I assume SWAT-EVENT, please write this in title of the table) three scenarios Daily simulation, Basin level UH parameter simulation and Sub-basin level UH parameter simulation. From Figure & I can see you had two scenarios Simulated daily discharge SWAT and simulated sub-daily discharge SWAT-EVENT. In methodologies clearly describe what is base scenario and to which scenario is it compared.

5 Discussion P10, L28-30: Sentences from previous chapters are often repeated.

6. Conclusions P12, L16-30: All the text in the conclusions is just repeated from previous chapters. Delete existent text and please write down answers to this questions in conclusions: Why is this research unique? What are the shortcomings/uncertainties of this research? What did us and science community learned from it? Future work?

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