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Hydrology and Earth System Sciences Discussions

Interactive comment on "Validation of SWAT model for stream flow simulation and forecasting in Upper Bernam humid tropical river basin, Malaysia" *by* A. W. Alansi et al.

Anonymous Referee #2

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In this paper, the authors present the application of the SWAT model to a mesoscale humid tropical river basin in Malaysia to assess the effects of future land use changes on runoff generation in the catchment.

The interesting aspect of the paper is that, although it uses standard techniques that are not rather innovative, it addresses the important issue of land use change on water availability and its implications for management practices in a not well researched climatic region. Moreover, the paper is logically structured and the data used in the study appear to be of sufficient quality and length.

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However, the paper lacks fundamental scientific analysis and detail and reads in its current form more like a report than a scientific paper. For example, the authors state that the study showed that "SWAT was able to simulate and forecast flow in humid tropical conditions successfully and can be used to study the effects of future land use changes on flow" (page 7582, line 21), but throughout the paper there is no discussion or analysis, if the underlying model assumptions of the SWAT model are also valid for the humid tropical region and thus if the model is right for the right reasons. This is especially essential as the SWAT model is based on the SCS approach that was originally developed for application in the United States. In this context the paper could also benefit from comparing and analyzing the performance of different models on the same data set.

Furthermore the paper lacks any discussion on the causes for changes in runoff generation: Are land use changes the only factor? What about climate change or changes in possible water abstractions? These are essential questions that need to be analyzed and discussed in detail before any model or scenario application.

Finally, the paper suffers from severe language and reporting errors that makes it very difficult to understand (e.g. listing of statistical performance measures on page 7590, line 17-19), also some sections (e.g. 4 results and discussion) are too short and lack fundamental information, while others are too lengthy for standard approaches (e.g. 3.5 statistical approaches).

I would like to encourage the authors to resubmit their paper after a complete and thorough revision and editing by a native speaker.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 6, 7581, 2009.

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