

## ***Interactive comment on “Multiobjective calibration of the MESH hydrological model on the Reynolds Creek Experimental Watershed” by A. J. MacLean et al.***

**Anonymous Referee #2**

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The manuscript is relevant; however it needs to undergo some mayor revisions to support the conclusions. The main problem is that the objective and methodology are not very clear. For instance, it is an calibration exercise of a physically based and distributed hydrological model coupled to a land surface scheme, so the values of the parameters and their bounds are crucial to properly (physically) represent the process, and this isn't showed in the manuscript. This is even more important because the experiment was conducted in a well instrumented basin. Almost there are no comments in the spatial representation (definition of the GRUs) and the effects of this on the parameters (only vegetation cover was used). Furthermore calibration was conducted on an inter-annual basis and again no comment about the uncertainty in

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the parameter values in each season. On the other hand if it is a calibration exercise a much simple model could be used. Also it is not clear how the multi-objective (SWE+Q) function was built. The conclusions are not supported by the methodology. Within the text are the specific comments.

Please also note the supplement to this comment:

<http://www.hydrol-earth-syst-sci-discuss.net/7/C891/2010/hessd-7-C891-2010-supplement.pdf>

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