

## ***Interactive comment on “Effect of land use/land cover and climate changes on surface runoff in a semi-humid and semi-arid transition zone in Northwest China” by Jing Yin et al.***

### **Anonymous Referee #1**

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This manuscript investigates the relationships between land use and climate changes and corresponding hydrological responses in northwest China. The paper reveals some interesting findings. The manuscript can be considered for publication, if the following comments can be addressed properly. Major comments: 1. The effects of land use change and climate change should be discussed separately. 2. To explicitly assess the impact of land use changes on runoff generation, the impact of rainfall variation should first be excluded. Relevant discussion should be included on this topic. 3. I would encourage authors to rewrite the methodology description section. Give a clear message to the reader what you did and how you did. Some parts in the results analysis and discussion section (e.g. model calibration and validation) are more suit-

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able to be in the methodology section. 4. The values in Table 2 are not acceptable, the authors should re-check the reference (Moriyasu et al., 2007). 5. The influences of different land use types (such as area and spatial distribution) are also important to runoff generation. How to assess these effects? 6. It seems that the authors discussed the effects of the "Conversion of Cropland to Forest and Grassland Program" on the water budget of the Jinghe River basin (Qiu et al., 2011, Journal of Environmental Quality, 40, 1–11). What's the difference between the previous publication and this study?

Minor comments:

1. 3-28. The objectives. I would suggest the authors to add an objective to discuss how the LULC and climate changes affect surface runoff. 2. 4-6. Although finally draining into the Yellow River, the Jinghe River is a tributary of the Weihe River. 3. 5-10. How many runoff data was used and who performed the measurement? 4. 5-18. 'determination coefficients' should be 'determination coefficient'. 5. 8-31. I suggest the authors unify the number of decimal places. 6. 9-32. The citation style for two authors. The authors sometimes use 'and', but sometimes '&'. I suggest the authors unify the citation style. 7. The language need to be improved. There are many grammatical and spelling mistakes

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