

Interactive comment on “Study on the effects of storm movement on rainfall-runoff modelling at the basin scale” by S. K. Sigarood and Q. Chen

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The manuscript presents a study on the effects of storm movement on rainfall-runoff modelling at the basin scale. The manuscript is generally well written with clear research goals and an appropriate structure to present the methods and results. Even though the goal of the research (precisely examine the effects of moving storms on hydrograph simulation) is extremely ambitious and the modeling results highly uncertain, I believe the authors are to be congratulated for focusing on an interesting topic and providing some critical answers on rainfall characteristics in ungauged basins. Some comments for this work are: 1. Line97-100, ‘the hourly rainfall was obtained by multiplying the estimated total daily rainfall by the ratio of hourly rainfall to the daily rainfall’. How was this ratio calculated? Was it the mean ratio value of 3 gauges? How to make sure this ratio is appropriate for a certain daily rain gauge? 2. More information should

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be presented on the concept of ‘Time of Gravity Centre of Hyetograph’. How was it calculated and why it is important for determine the movement of cloud? 3. Is a linear equation appropriate for describing the TGCH plane? Is there any assumption made? (is the cloud pattern treated unchanged during the movement?) if so, the assumption should be explained in detail. 4. The calibration and validation of HEC-HMS model should be included. 5. The criteria for storm selection should be explained. What is ‘typical storm events’? Why only 7 storms were selected? 6. More explicit conclusions of this research should be presented in the manuscript. 7. The figures are hard to understand, necessary explanations should be included.

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