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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Accuracy assessment of real-time flood forecasting of coupled hydrological and mesoscale meteorological models" *by* Aida Jabbari et al.

Anonymous Referee #1

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1. General comments

This manuscript describes the real time forecasting using coupled hydrological and mesoscale meteorological models for Imjin transboundary river basin in Korea. The authors analyzed to get optimal temporal and spatial resolution of Weather Research Forecasting (WRF) model and hydrologic model. This manuscript provides optimal resolution of the mesoscale and hydrologic models for the applied area. But there is no scientific new findings or procedure. And also lack of description for fundamental data used. The measured rainfall in this area, especially transboundary basin, is not clear and enough. For example, 2/3 of area is placed in North Korea, did the authors

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analyzed the hourly rainfall of North Korea? If the rainfall data of North Korea was not used, the results of this research are not verified for the whole Imjin river basin including rainfall and streamflow. If the meteorological and hydrological data were not sufficiently used, the procedure and accuracy assessment for the coupling hydrological and meteorological model have no strong basement. Also, only three big flood events were considered. Is it enough?

2. Specific Comments:

* page 3, line 1, ultra-fine - Is there any criteria for the ultra-fine?, Reference? * page 3, line 10, seventh largest river in Korea - South or North or both? * page 3, line 14, 1100 mm - need reference for the description * page 3, line 17, it was difficult∼ - How did the authors handle the data for the North Korea? * page 3, line 20-23, The political issue is not necessary. * page 3, line 26-30, event 20020828-0904 - numbering for the floods are not general, recommend tables and concise numbering. * page 3, line 30- - Is there severe damages in Imjin river? * page 4, line 3, different nature - what the authors think the different natures between North and South Korea in Imjin River * page 4, line 5, the number of rain gauges is changed, why? Need the rain gauges on the Fig. 1. * page 5, line 13, SURR semi-distributed continuous rainfall runoff model - how did the authors consider spatial resolution using SURR model and actual evapotranspiration for the continuous rainfall runoff simulation. In the manuscript, there is no mention about the evapotranspiration, even though the event applied for two months period (2012701-0910). * page 5, line 28∼, calibration for the hydrologic model - it is not enough for the calibration analysis, more description is necessary for parameters for each event and statistic criteria. Spatial resolution used for the hydrologic model is not clear (km x km or 38 subbasins?) * page 12, line 12-17, it is not necessary for this manuscript. * page 17, table 1, add bias and correlation, RMSE * page 18, table 3, additional figure for the statistics is more efficient for the readers * page 1, figure 1, location of rain gauges is necessary * page 28, figure 6, legend should be used same scale * page 33, figure 11, Y-axis subtitle is misspelled. * page 12, figure 12, unit is missed in Y-axis

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