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Hydrology and Earth System Sciences Discussions

Interactive comment on "The scale of typhoon RUSA" *by* N. W. Kim et al.

Anonymous Referee #2

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General remarks

The paper gives a mostly phenomenological description of the heavy rainfall events associated with the typhoon RUSA which hits the Korean peninsula in August 2002. It led to extreme rainfall in the southern and eastern parts of Korea. The 24h cumulative rainfall was the largest recorded heavy rainfall in Korea. It had tremendous effects upon various types of infrastructures. Therefore the overall aim of the paper is to evaluate the precipitation measurements during RUSA with respect to their impact on the design of future hydraulic structures. As method the Depth-Area-Durations (DAD) analysis and the Probable Maximum Precipitation (PMP) analysis are chosen which are defined in WMO handbooks. The authors present within their section 2 and 3 a synoptic overview of the typhoon, first the large scale settings and extratropical influences, second a more regional analysis of the rainfall events. Section 4 is devoted to the actual DAD/PMP

analysis.

The content of sect. 2 and 3 is very broad and purely descriptive.I can't see how it is related in that breadth to the actual goal of the paper. Moreover, the wording and the expressions are to a big part non-meteorological. Good examples of descriptions of such exceptionel meteorological situations can be found e.g. in WEATHER published by the british Roy. Met. Soc. The discussion of Fig. 5 to 8 is in contrast very short and shows nothing new except that there are strong fluctuations of precipitation in time and space which is nothing new.

The actual analysis is presented in sect. 4. The major drawback is that there are no error estimates available at all. Are the numbers in Table 4 or 7 significantly different at some reasonable level or not? Are the curves in Fig. 9 and 10 significantly separated such that one can indeed distinguish between different aggregation time scales and space scale? It is this uncertainty information which will be important for a decision pro or con accepting modified DAD or PMP values for the design of future constructions.

To summarize, I can not recommend a publication of the paper in its present version.

Special remarks:

The abbreviations DAD and PMP are never explained in the paper. So either the reader is familiar with the acronyms or he/she is left alone completely.

The authors use in most cases in the text the female gender for the typhoon but sometimes switch to the neutral case. I personally would prefer the neutral gender (but I am not a native speaker) but in any case a consistent way should be chosen.

Reg. Fig.3 in sect. 3 it is not mentioned how the regional maps are derived from the point measurements.

Table 3: There is no indication how the return time is estimated from the data (besides the general fact that there is no indication about its certainty)

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The list of references is remarkably short and uninformative. There is no citation from a reviewed journal which is – given the topic – strange.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 3, 3147, 2006.