

Interactive comment on “Characteristics of precipitation system accompanied with Changma front at Chujado, Korea, 5 to 6 July in 2007” by C.-H. You et al.

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Dear Editor,

We are grateful to the referees for their helpful comments, which would be carefully considered in preparing our next revised manuscript. The manuscript has been revised following the comments of the referees. The purpose of the paper has been made clearer, unreadable figures were changed and conclusion has been changed briefly. English grammar has been re-checked and mistakes have been corrected. The modifications made in the revised manuscript following the suggestions of the referees' are given below and supplement.

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I hope you will find the paper acceptable for publication in the Hydrology and Earth System Sciences.

Best regards, Dong-In Lee

Response to the comments of Referee #3(C570-571)

General Comments

Referee's comment: Better stating the overall objective of the paper.

Response: Yes. Referee is correct. The observational studies are focused on the mesoscale or smaller scale characteristics of precipitation system accompanied by Changma front have been rarely done. Therefore, we focus on the mesoscale features of rainfall system using weather radar, disdrometer and radiosonde data. And our purpose is to analyze the three rainfall systems within precipitation system maintained for 22 hours.

Referee's comment: Discuss the representativeness of the three rain events for the local climatology, and reflect on the robustness of the obtained results;

Response: It is less representative for explaining whole of Changma front. However, there have been rarely studied on the mesoscale features of rainfall system accompanied by Changma front up to now. We tried to find out the characteristics of rainfall system more detail in a view of mesoscale and smaller scale as mentioned above response. This paper will give new aspects on characteristics of Changma front precipitation systems for further study.

Referee's comment: Revise the discussion on the vertical wind shear. This may include the use of re-analysis data as suggested by Steve Guimond;

Response: Referee's comment is reasonable. However, the NCEP/NCAR reanalysis data has low resolution of 2.5 degrees by 2.5 degree. It is difficult to represent small scale rainfall system. Our purpose is to find out the meso scale structure of rainfall

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system and analyze the three rainfall systems within precipitation system maintained for 22 hours. We used NCEP/NCAR reanalysis data for describing the synoptic condition. In the near future, we would like to analyze kinematic structure of the Changma front with fine resolution reanalysis data and numerical simulation. Referee's comment: Elaborate on the dual-Doppler analysis;

Response: We changed as referee's comment. We changed the focus into the relationship between rain drop size distribution and the strength of updraft/downdraft derived from dual Doppler analyses.

Referee's comment: improve the quality of figures as they are often not readable

Response: We improved most of the figures according to referees' comments.

Please also note the Supplement to this comment.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 6, 1523, 2009.