Reviewer (Comments to Author):

This manuscript investigates the spatio-temporal characteristics of summer precipitation systems over the Korean peninsula through the geostatistical analysis using the combined datasets of ground observation and radar data. For the detailed analysis, they categorized the precipitation systems into four types based on the precipitation intensity (3mm/h) and ratio (20%) of precipitated stations. They found that the e-folding distance and time of precipitation systems are clearly dependent on the precipitation area, and directional pattern of precipitation systems. Also they found that the spatial distribution of water vapor has similar characteristics with precipitation but with strong spatial correlation over much longer distance (~100 km), through the analysis of water vapor channel data of Himawari/Advanced Himawari Imager data.

The results obtained in this study can be used for the detailed understanding of precipitation over South Korea. However, the manuscript should be improved in terms of additional analyses and scientific interpretation of results. Therefore, the manuscript needs to undergo a minor revision before being ready for publication in Hydrology and Earth System Sciences. Below I give some comments and suggestions that would help improving the manuscript.

General comments

1) As we know that thresholds values are very important for the categorization (or clustering) precipitation systems. Please presents the background or ground of threshold values (3mm/h, 20%) used in this study.
2) The domain of data mentioned in the 2 Data description is not well matched with the analysis results (e.g., Figure 1)
3) The author should mention about the sensitivity of analysis results to the threshold values for the categorization of precipitation systems.
4) It will be helpful for the understanding of the single cell storms marked by X in Figures 9 and 10 if the authors presents the background for the marking.

Minor Comments

1) The location of AWS is not correct in Figure 1.

2) I think that the number of y axis in Figures 5 and 8 is km. So, give the unit in Figures 5 and 8.

3) Figure 6. The averaged spatial autocorrelation of brightness temperature of water vapor band (a) 8, (b) 9, and (c) 10 for each precipitation ➔ The averaged spatial autocorrelation of brightness temperature of water vapor band (a) 8, (b) 9, and (c) 10 Himawari/AHI for each precipitation

4) Some index of figures are not clear (e.g., Figures 7, 8, 9, 10, and 11).

5) Check the order of references (e.g., Cassardo, …, Carruthers, …; Sminth,…Skojen,…)