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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Compound flood potential from storm surge and heavy precipitation in coastal China" *by* Jiayi Fang et al.

Anonymous Referee #3

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This study investigates the compound events from storm surge and heavy precipitation using 11 tide gauges along the coast of China and discusses some potential driving for the occurrences of compound events. This study can provide an important supplement for the analysis of compound events in China owing to the most comprehensive records of storm surge used, even though the methods and results are not very innovative and surprise. There are some concerns that should be addressed for further consideration for potential publication in HESS. Firstly, in the section of "3.1 Selecting compound events", Figure 2 shows the scatter plot for daily maximum storm surge and daily maximum precipitation. You have hourly sea-level data of 11 tide gauge, do you mean to extract the daily maximum one-hour sea level data from these hourly data firstly? But for precipitation data, you only have daily precipitation data, how can you

have daily maximum precipitation? Secondly, in the section "4.2 Effects of sea-level rise on compound event frequencies", it is not very clear how to remove the sea level rise. Do you mean the daily sea level minuses the annual sea level? Thirdly, in the section of "4.5 Impacts caused by compound and non-compound flood events", how can you separate the damages induced by compound events based on typhoon related damages records? For instance, heavy wind due to typhoon events can also result in damages and losses. It is hard to separate the damages from different disasters.

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