

Interactive comment on “Scenario-based inundation analysis of metro systems: a case study in Shanghai” by Hai-Min Lyu et al.

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This manuscript presented an investigation on the flooding risk of metro system, especially for the stations' inundation during severe rainstorm. The topic is interesting and within the scope of this journal. Overall quality of this manuscript is well. However, to improve the quality and readability of the manuscript, suggestions should be considered by the authors.

Following comments would help the authors;

(1) Page 1 in line 18; suggest to rephrase the sentence structure “In addition, an equation is proposed to qualitatively calculate the inundation to figure out possible inundation risks of Shanghai metro system;

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(2) Page 4; in Introduction: “Begin with a broad, general statement of the topic and narrow it down to the context”. Please add some introductory lines of Shanghai metro system regarding inundation or overflow problems in the past, before the objectives of the research;

(3) Page 8 in line 4; suggest to specify the tools of GIS used to measure inundation depth;

(4) Page 8 in line 17; please revise “was” with “is”;

(5) Page 9 in line 8; which tool in GIS is used to extract sub catchments, please mention it;

(6) Page 14: in Fig. 4, note that SI unit for runoff is m³/s, please recheck the unit you used is ok?

(7) Page 18 in line 18; which four metro stations are found under high inundations risks. please specify it in your manuscript.

(8) Page 22; Fig. 8, please note flood location in 2005 in the map is indicated with circular simple but in legend it is triangular, revise the legends

(9) Page 24; please make sure that all 3-objectives discussed in “introduction” section, are achieved in the “conclusion” as well. It would be good to add inundation depth and results for all 3 scenarios as mentioned in objectives of the study

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