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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Future extreme precipitation intensities based on historic events" *by* Iris Manola et al.

Anonymous Referee #1

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The article will be acceptable, although some revision is desired to make it easier to understand.

[Specific comments] (1) The authors describe a number of approaches and methods to estimate future extreme events in Chapters 1 and 2. It is desired to make their relations clearer for readers who do not know much about techniques in this field.

@ Please make clear how the three methods mentioned in the upper part of Page 3 (future-weather method, first scaling method, and second scaling method) are related to the "current approaches" described in the middle part of Page 2.

@ Also, please make clear how these three methods correspond to the three methods that appear in the first paragraph of Chapter 2 (Pi-Td scaling method, future weather

method, and linear delta-change method).

@ It is better to write the method name in each box in Fig.1.

(2) It will be better to change the phrase "historic events" in the Title to "a historic event", because the study was made for a single case.

[Technical comments] @ Line 30 on Page 2 "Selection of events that have triggered concerns by for instance flood-risk managers using leads to —": I cannot understand the sentence. Possibly the word "using" is unnecessary.

@ It is better to show the location of Amsterdam on a map.

@ Line 9 on Page 6 "0.28deg x 0.28deg grid size (∼32x32 km2)": 0.28 deg in longitude will be about 20 km at the latitude of 50 deg.

@ Line 7 on Page 8 "Fig.2": Fig.3

@ Line 20 on Page 10 "Td is expected to rise by 2 deg by 2050. — the entire range of the historic precipitation is increased by 25% (or, assuming a linear increase with temperature, an increase of 11.8% per degree of Td warming)." 11.8% x 2deg is 23.6%, which is different from 25%. Please check.

@ It is better to write the number of members for Fig.5 (seven?).

@ Line 11 on Page 12 "9am (top) and 2pm (bottom).": left and right.

@ Line 4 on Page 12 "the Pi-Td method increases the total precipitable water for the entire event by 36%, which is about 17%/deg of warming.": If the increase of Td is 2 deg, then the increase of 36% means 18%/deg of warming. Please check. The situation is similar for the phrase "27%, which is about 13%/deg" in Line 19 on Page 13.

@ Line 9 on Page 13 "the rapid drying of the soil": Why does the soil dry after precipitation?

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