

Review of

**A New Method for Calculating Highway Blocking due to High Impact Weather Conditions**

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**General comments**

The **Revised manuscript** and **Responses to Reviewers** together addressed most of the reviewers' comments and the quality of the manuscript has been improved. However, some of the responses could have been included in the revised manuscript to further clarify the methodology and results. Moreover, the figure quality was reduced dramatically, compared to the original submission. The English writing was slightly improved.

The manuscript presents a study on a topic within the scope of the Natural Hazards and Earth System Sciences (NHES). I would recommend this manuscript for publication after addressing the following minor comments.

**Specific comments**

1. **In general, the discussion and elaboration in the response to reviewers should be included in the main text.** Please further include some discussion in the responses to reviewers in the revised manuscript, for example:
  - Response to reviewer #1: Point 5 The CRITIC weigh method -> Bullet 2. The further consideration of weighting (e.g., conflicting nature of different indicators) should be included in the main text.
  - Response to reviewer # 2: Methodology - Point 3 “The use of highly correlated data is to better fit the CRITIC method. The CRITIC method combines two dimensions, intensity of comparison and conflict, to combine the weights of indicators. Comparative strength is expressed using the standard deviation, which reflects the degree of dispersion of data within the indicator, and conflict is expressed using the correlation coefficient, which reflects the correlation between indicators.”
  - Response to reviewer #3: Results – point 2 “Summer rainfall in mountainous areas is heavy, often accompanied by thunderstorms and short-term heavy precipitation events. Mountain terrain is special, the speed of rainwater runoff is fast, easy to form flash floods or debris flow, these natural disasters are the main reasons for blocking the highway.”
  - And more.

2. **Figure resolution was reduced significantly.**
  - Please increase the resolution of all figures
  - Please include the longitude, latitude and legend of all the geographic Figure 1 and 3
  - Figure 1a and 1b can indicate the regional division using different colour codes and then add a region colour legend while keeping the province labels in 1b
  - Figure 3b the scale of the vertical bar was missing in the legend
3. WMO definition of “High-impact weather” was included in the revised manuscript. However, the term “adverse weather event” was also used. It is recommended to use consistent terminology.

### Minor comments

4. “response time in different high-impact weathers **asl** the input vectors in the calculations.” Should “asl” be “as”?
5. Line 49-50: “The weather forecasting products, if used, the road transportation sectors can generate great economic benefit.” Should be “**If** the weather forecasting products **are used**, the road transportation sectors can generate great economic benefit”
6. Line 91-93: “it can be divided into two categories: planned and **unexpected.**” and “**Sudden-type** blockages include...”, please use the consistent category label “unexpected” or “sudden-type”