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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Study on the drought risk of maize in the farming-pastoral ecotone in Northern China based on physical vulnerability assessment" *by* Z. Wang et al.

J. Wang

wangj@cau.edu.cn

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Manuscript Review of nhess-2016-204: Study on the drought risk of maize in the farming-pastoral ecotone in Northern China based on physical vulnerability assessment

I would recommend that this manuscript be published after moderate revision. Please find my comments below.

General comments This paper presents a study on the drought risk of maize in the farming-pastoral ecotone in Northern China. The novelty of the work is to conduct a physical vulnerability curve based on the relationship between drought hazard inten-

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sity index and yield loss rate. The study is generally well organized and presented. However, there are several issues which need attention before publication. 1) In the abstract, the authors should offer some quantitative results and conclusions. 2) The description of ecotone in 2.1.1 should be shortened and most of the section should be moved into the section of introduction. 3) China meteorological data sharing service system of China only offers sunshine hours. So, how to transfer the sunshine hours to global radiation? 4) The authors should offer the genetic parameters of maize used in the EPIC model for the three sites in Fig.3. Moreover, please provide the station name of six validation sites. 5) Please provide sowing date of maize, planting density of maize, fertilization amount used in running EPIC model at three representing sites under sufficient and no irrigation conditions. 6) The linear regression curve seemed more appropriate to fit the data than the logistic curve. So, why you select the logistic curve as the physical vulnerability curve? 7) The discussion section should be strengthened by comparison with previous studies, including the impact of drought on spring maize in the farming-pastoral ecotone, the measures used to adapt to climate change, etc. Moreover, please have a native speaker to improve the English of the text. Therefore, I would recommend that this manuscript be published after moderate revision. Other minor comments I suggested that the title should be changed into "The drought risk of maize in the farming-pastoral ecotone in Northern China based on physical vulnerability assessment". P1L10: Make "4" as superscript. P1L21: What does magnify and reduce function mean? P1L22-23: Delete the sentence because it is obvious. P2L31: Change "response to" into "tackling". P2L44-L45: The references should be listed in chronological order. P24L536: Missing the volume and page number of the publication. P3L67: Change "Uzielli et al. (Uzielli et al., 2008)" into "Uzielli et al. (2008)". P3L70: Change "Douglas (Douglas, 2007)" into "Douglas (2007)". P3L73-L74: The references should be listed in chronological order. P3L75: Change "factor" into "factors". P3L77: Change "Wang et al. (Wang et al., 2013)" into "Wang et al. (2013)". P5L158: Change the caption of Table 1 into "Meteorological, soil and relative agricultural data". P7L162: "CH", "CV", "CE" should be consistent with Eq.1. P10L221ïijŽ delete "to" before "the

water stress". P11L48: change "represent" into "representive". Table 2: change "filling" into "grain-filling". P12L270: Change "Wang et al. (Wang et al., 2015)" into "Wang et al. (2015)".

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