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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "A fast monitor and real time early warning system for landslides in the Baige landslide damming event, Tibet, China" *by* Yongbo Wu et al.

Yongbo Wu et al.

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We are appreciated for the referee's comments and their careful reading of our MS. Please find bellow our answers to all items raised. 1. Title: The title is not in proper English. It should be "monitoring" system, not "monitor". It is also unclear whether this is a local scale system (because you name Baige landslide event) or a regional system (because you use landslides in plural). Reply: Thanks again for the valuable suggestion. The Title has been changed as "A fast monitoring and real time early warning system for landslide in the Baige landslide damming event, Tibet, China". The system mentioned in this manuscript is a local system.

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Discussion paper

2. Abstract: P1L8: Please avoid capitalization where not appropriate. "Early", the second word, should not be with a capital "E". P1L8: I would also argue, that an EWS (early warning system) does not really avoid a disaster as it does not stop the landslide from happening. P1L9: for A specific landslide OR for specific landslides. P1L10: people not familiar with China have no idea what Beidou or a Beidou terminal is. Please rephrase. P1L11: The real time precursor predication method IS based Reply: P1L8: "Early" has been changed by early; P1L8: Yes, an EWS (early warning system) does not really avoid a disaster minimize disaster losses, so we change the description by “minimize disaster losses”; P1L9: in this paper we mean a type of landslides, so it should “be specific landslides”; P1L11 has been rephrased.

3. There are obviously substantial language issues that need to be resolved. Please revise. No further comments on typops and language are provided from my side in the remaining review. Reply: I have revised the language seriously.

4.P1L11: there is no explanation what a KF-FTT-SVM model is. What does the abbrevation stand for? P1L13: rather use landslide instead of slide. Reply: The full name of KF-FTT-SVM is given in P1L11. Slide is replaced by Landslide in P1L13.

5.Introduction: P1L21: Provide a citation for the claim that landslides are the third largest (?) geological hazard. P1L22: Add a space before the bracket. There are also several instances of missing spaces in the remaining document. P1L26ff: additional information on landslide EWS could be added, consider adding information from Overview on landslide EWS and review of existing systems: Thiebes, Benni, and Thomas Glade. “Landslide Early Warning Systems – Fundamental Concepts and Innovative Applications.” In Landslides and Engineered Slopes. Experience, Theory and Practice, edited by S Aversa, L Cascini, L Picarelli, and C Scavia, 1903–1911. Naples, Italy: CRC Press, 2016. https://doi.org/10.1201/b21520-238. Thiebes, Benni. Landslide Analysis and Early Warning Systems: Local and Regional Case Study in the Swabian Alb, Germany. Springer Theses Series. Springer, 2012. Case studies: Thiebes, Benni, Rainer Bell, Thomas Glade, Stefan Jäger, Julia Mayer, Mal-

colm Anderson, and Liz Holcombe. “Integration of a Limit-Equilibrium Model into a Landslide Early Warning System.” Landslides 11, no. 5 (June 14, 2013): 859–75. https://doi.org/10.1007/s10346-013-0416-2. Calvello, Michele, Ricardo Neiva d’Orsi, Luca Piciullo, Nelson Paes, Marcelo Magalhaes, and Willy Alvarenga Lacerda. “The Rio de Janeiro Early Warning System for Rainfall-Induced Landslides: Analysis of Performance for the Years 2010–2013.” International Journal of Disaster Risk Reduction, October 2014. https://doi.org/10.1016/j.ijdrr.2014.10.005. Michoud, C., S. Bazin, L. H. Blikra, M.-H. Derron, and M. Jaboyedoff. “Overview of Existing Landslide Early-Warning Systems in Operation.” In EGU General Assembly Conference Abstracts, 14:2919, 2012. http://adsabs.harvard.edu/abs/2012EGUGA..14.2919M. Piciullo, Luca, Michele Calvello, and JoséÂaMauricio Cepeda. “Territorial Early Warning Systems for Rainfall-Induced Landslides.” Earth-Science Reviews 179 (April 2018):228–47. https://doi.org/10.1016/j.earscirev.2018.02.013. Piciullo, Luca, Mads-Peter Dahl, Graziella Devoli, Hervé Colleuille, and Michele Calvello. “Performance Evaluation of the National Norwegian Early Warning System for Weather Induced Landslides.” Natural Hazards and Earth System Sciences Discussions, January 16, 2017, 1–28. https://doi.org/10.5194/nhess-2017-24. Rossi, Mauro, Silvia Peruccacci, M. T.Brunetti, I Marchesini, S. Luciani, Francesca Ardizzone, V Balducci, et al. “SANF: National Warning System for Rainfall-Induced Landslides in Italy.” In Proceedings of the 11th International & 2nd North American Symposium on Landslides, edited by E Eberhardt, Corey R. Froese, A. Keith Turner, and S. Leroueil, 2:1895–99. London: Taylor & Francis, 2012. Segoni, S., A. Battistini, G. Rossi, A. Rosi, D. Lagomarsino, F. Catani, S. Moretti, and N. Casagli. “Technical Note: An Operational Landslide Early Warning System at Regional Scale Based on Space–Time-Variable Rainfall Thresholds.” Natural Hazards and Earth System Science 15, no. 4 (April 16, 2015): 853–61. https://doi.org/10.5194/nhess-15-853-2015. Kirschbaum, Dalia Bach, Robert Adler, Yang Hong, Sujay Kumar, Christa Peters-Lidard, and Arthur LernerLam. “Advances in Landslide Nowcasting: Evaluation of a Global and Regional Modeling Approach.” Environmental Earth Sciences 66, no. 6 (July 2012): 1683–

96.https://doi.org/10.1007/s12665-011-0990-3. Reply: P1L21 it was said in a Chinese book, and I cannot found the citation, so I change the description. P1L22: Space is added. P1L26: I have down load all the papers and read them carefully. I have rewrote the introduction, and refresh the citation.

6. P2L10: you presented the UNISDR/UNDRR classification of EWS; however, the systems you mention in this line and the following are not necessarily real EWS that include works on all 4 fields of action. They are mostly monitoring and/or forecasting systems. Please check carefully whether they are really fully fledged EWS, e.g. by checking to which extent they are really in operation (most are not but are monitoring systems with some aspects of predictions). P3 Figure 1: Typos in figure. Seneor should be sensor. P5L8: can you provide more information on the characteristics of the landslide, the dam and the lake? What are the geological and geomorphological conditions? Why was the landslide triggered? Have there been any movements before? P11L5ff: the language is not appropriate. Please rephrase this section. Reply: P2L10: In this study we focus on the monitoring and warning model of landslide EWSs. I have emphasized in P2L5. P3: Figure has been changed. P5L8: More information is given in P5L10. P11L5: The language is rephrased.

7. Discussion: The discussion does not really reflect on the limitations and uncertainties of the study but rather summarises the research. This should be revised. Reply: The limitation and uncertainties are given in P16L28.

Please also note the supplement to this comment:
https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2019-48/nhess-2019-48-AC2-supplement.pdf

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