

Interactive comment on “Numerical modelling of Glacial Lake Outburst Floods using physically based dam-breach models” by M. J. Westoby et al.

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Westoby and co-authors address the important topic of dam breach scenario modeling, which is relevant to hazard assessment and understanding dam breach processes and flood hydraulics. Two referees have commented on the paper, and here I summarize my assessment based on the consistency of their reviews and my own reading of the paper. Both reviews raise major concerns about the framing of the article and the study design, including the appropriateness of the 2D model, the statistical methods, and logical inconsistencies between the emphasis on equifinality and use of Bayesian inference. Both referees also note that the choice of model (HR BREACH) is not justified. I agree with both referees that the paper is not always clearly written, and that discussion of the relevant literature on statistics and uncertainties is insufficient.

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Referee #1 recommends rejection, and although Referee #2 recommends “moderate revisions and further clarification,” Referee #2 echoes many of the same concerns of Referee #1 and does not make any positive statements about the scientific contribution of the paper except to say that if the 2D approximation was shown to be appropriate for this 3D modeling problem and if the approach was demonstrated to be applicable to other situations, then the paper would be of value. Unfortunately, Referee #1 argues convincingly that the 2D approximation and other aspects of the modeling approach are flawed and not applicable to other situations. The authors are free to address the referee comments in the public discussion at this time. According to journal policy, all comments have to be answered in the public discussion before a revised manuscript can be considered for final publication. However, given that the referee concerns about both the study design and its presentation are in my view major and that the scientific contribution of the work is unclear, I suggest the authors may instead wish to withdraw the paper at this stage. I would encourage a new submission of a similar study if the fundamental problems pointed out by the referees can be addressed and the scientific value of the work is clearly articulated.

Interactive comment on Earth Surf. Dynam. Discuss., 2, 477, 2014.

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