



Interactive  
Comment

## ***Interactive comment on “Three dimensional slope stability problem with a surcharge load” by Y. M. Cheng et al.***

**Anonymous Referee #2**

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The article focusses on a three dimensional slope stability problem with a surcharge load. The topic of the paper is highly relevant and interesting for the rock and soil mechanics community and especially for geotechnical engineers and engineering geologist who are working in the field of man-made slopes or embankments (design, construction, slope stability). Case studies related to this problem i.e. impact of a surcharge load are observed frequently for slope stability problems and design problems in geotechnical engineering, but are much less relevant in the natural hazard community who work on natural slopes and their hazards, which is a major scope of this journal (aims and scope see below). Although the article contains an interesting description of an analytical solution for a three dimensional slope stability calculation method, which considers a surcharge load on top of the slope, there is no direct relationship to topics

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addressing the NHESS journal. But it is an interesting paper, which requires some improvement to increase readability and traceability for a classical geotechnical journal. At the moment, the article is difficult to read and traceable. Thus, improvements should consider the heavy load of equations and derivations of this article. For example, a separation of highly relevant final equations from equations, which represent intermediate steps may help to improve the readability of this article. This can be done when appendixes are used and equations are explained in more detail.

Considering the aims and scope of NHESS, I do not really find a good or even reasonable agreement of the article. Please proof it by yourself.

Natural Hazards and Earth System Sciences (NHESS) is an interdisciplinary and international journal dedicated to the public discussion and open-access publication of high-quality studies and original research on natural hazards and their consequences. Embracing a holistic Earth system science approach, NHESS serves a wide and diverse community of research scientists, practitioners, and decision makers concerned with detection of natural hazards, monitoring and modelling, vulnerability and risk assessment, and the design and implementation of mitigation and adaptation strategies, including economical, societal, and educational aspects.

The scope of NHESS includes the following: - the study of the evolution of natural systems towards extreme conditions, and the detection and monitoring of precursors of the evolution; (article does not consider this scope!) - the detection, monitoring, and modelling of natural phenomena, and the integration of measurements and models for the understanding and forecasting of the behaviour and the spatial and temporal evolution of hazardous natural events as well as their consequences; (article does not consider this scope!) - the design, development, experimentation, and validation of new techniques, methods, and tools for the detection, mapping, monitoring, and modelling of natural hazards and their human, environmental, and societal consequences; (article does not consider this scope!) - the design, implementation, and critical evaluation of mitigation and adaptation strategies to reduce the impact of hazardous natural

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events on human-made structures and infrastructure, to reduce vulnerability and to increase resilience of individuals and societies; (article does only marginally consider this scope!) - the analysis of the impact of climatic and environmental changes on natural hazards and their consequences. (article does not consider this scope!)

Papers submitted to NHESS can address different techniques and approaches including theory, modelling, experiments, case studies, and instrumentations. The journal covers the following broad subject areas, which are used to categorize the paper for review: - atmospheric, meteorological, and climatological hazards; (article does not consider this subject areas!) - sea, ocean, and coastal hazards; (article does not consider this subject areas!) - hydrological hazards; (article does not consider this subject areas!) - landslides and debris flow hazards; (article does marginally consider this subject areas!) - earthquake hazards; (article does only marginally consider this subject areas!) - volcanic hazards; (article does not consider this subject areas!) - other hazards (e.g. glacial and snow hazards, karst, wildfires hazards, and medical geohazards); (article does not consider this subject areas!) - databases, GIS, remote sensing, early warning systems, and monitoring technologies; (article does not consider this subject areas!) - risk assessment, mitigation, and adaptation strategies, socio-economic and management aspects; (article does not consider this subject areas!) - dissemination, education, outreach, and teaching. (article does not consider this subject areas!)

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 1291, 2015.

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