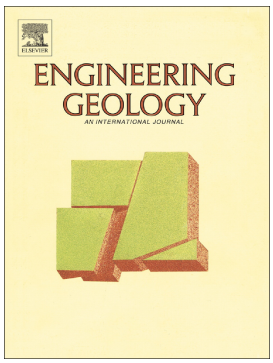

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What we have learned from the 2008 Wenchuan Earthquake and its aftermath: A decade of research and challenges

Xuanmei Fan[a], C. Hsein Juang[b,*], Janusz Wasowski[c], Runqiu Huang[a,*], Qiang Xu[a], Gianvito Scaringi[a], Cees J. van Westen[d], Hans-Balder Havenith[e]

[a] *State Key Laboratory of Geohazard Prevention and Geoenvironment Protection, Chengdu University of Technology, 610059, Chengdu, Sichuan, People's Republic of China*

[b] *Glenn Department of Civil Engineering, Clemson University, Clemson, South Carolina, USA*

[c] *Consiglio Nazionale delle Ricerche, Istituto di Ricerca per la Protezione Idrogeologica, Bari, Italy*

[d] *Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente, the Netherlands*

[e] *Géorisques et Environnement, Université de Liège, Belgium*

** Corresponding to: Prof. Dr. Hsein Juang (hsein@clemson.edu)*

Prof. Dr. Runqiu Huang (706618681@qq.com)

Abstract

The 2008 M_w 7.9 Wenchuan Earthquake (Sichuan, China) was possibly the largest and most destructive recent earthquake as far as the geo-hazards are concerned. Of the nearly 200,000 landslides triggered originally, many remobilized within a few years after the initial event by rainfall, which often caused catastrophic debris flows. The cascades of geo-hazards related to the Wenchuan Earthquake motivated research worldwide to investigate the triggering and mechanisms of co-seismic landslides, their rainfall-induced remobilization, the generation of debris flows, the evolution of their controlling factors, and the long-term role of earthquakes in shaping the topography. On the eve of the 10th anniversary of the 2008 Wenchuan Earthquake, we present a short review of the recent advances in these topics, discuss the challenges faced in the earthquake-related geo-hazards mitigation practice, and suggest priorities and guidelines for future research.