

[1]邓明枫,陈宁生,丁海涛,等.2007年西藏东南部群发性泥石流的水热条件及其形成机制[J].自然灾害学报,2013,04:128-134.

DENG Mingfeng, CHEN Ningsheng, DING Haitao, et al. The hydrothermal condition and formation mechanism of the group-occurring debris flows in the southeast Tibet in 2007[J]., 2013, 04: 128-134.

[点击复制](#)

2007年西藏东南部群发性泥石流的水热条件及其形成机制

《自然灾害学报》[ISSN:/CN:23-1324/X] 期数: 2013年04期 页码: 128-134 栏目: 出版日期: 2013-09-30

Title: The hydrothermal condition and formation mechanism of the group-occurring debris flows in the southeast Tibet in 2007

作者: [邓明枫¹](#); [陈宁生¹](#); [丁海涛¹](#); [周成灿²](#)

1. 中国科学院山地灾害与地表过程重点实验室/中国科学院水利部成都山地灾害与环境研究所, 四川 成都 610041;
2. 西藏自治区地质环境监测总站, 西藏 拉萨 850000

Author(s): [DENG Mingfeng¹](#); [CHEN Ningsheng¹](#); [DING Haitao¹](#); [ZHOU Chengchan²](#)

1. Key Lab. of Mountain Hazards and Surface Process, Institute of Mountain Hazards and Environment, Chinese Academic of Sciences, Chengdu 610041, China;
2. Department of Geological Environment Monitoring of Tibet Autonomous Region, Lhasa 850000, China

关键词: [冰川泥石流](#); [水热条件](#); [气温](#); [降雨](#); [形成机制](#)

Keywords: [glacier debris flow](#); [hydrothermal condition](#); [temperature](#); [rainfall](#); [triggering mechanism](#)

分类号: P642.23

DOI: -

文献标识码: -

摘要: 受青藏高原和印度洋暖湿气流的影响,西藏东南部分布着我国面积最大的海洋性冰川,这些海洋性冰川的长期运动产生了数量惊人的冰碛物,成为泥石流发育最重要的物源。多年来,西藏东南部的冰川泥石流频繁爆发,严重危及当地居民的生命财产、进藏交通系统的建设以及国际河流的安全。林芝地区波密县一直是区域冰川泥石流活动的中心,以2007年9月初波密县发生的几场泥石流为研究对象,结合波密气象站的气象数据,重点分析了前期气温和降水两个气象因子在该次群发性泥石流中的作用,构建了此次冰川泥石流暴发的前期水热条件,并以"9·4"松绕天摩沟泥石流为重点研究对象,分析了其形成机制。

Abstract: Affected by the Tibet Plateau and the warm-moist air current from the Indian Ocean, there exists the largest area of maritime glacier in the Southeast Tibet, China. Movement of the glacier in the past long time had triggered incredible amount of debris, which is the primary source material for debris flows. In the past years, glacier debris flows broke out frequently, posing a threatening to the local people, traffic facilities and trans-border rivers. In particular, Bomi County, Linzhi Prefecture in the southeast Tibet has been the center of glacier debris

[导航/NAVIGATE](#)

[本期目录/Table of Contents](#)

[下一篇/Next Article](#)

[上一篇/Previous Article](#)

[工具/TOOLS](#)

[引用本文的文章/References](#)

[下载 PDF/Download PDF\(1914KB\)](#)

[立即打印本文/Print Now](#)

[推荐给朋友/Recommend](#)

[统计/STATISTICS](#)

[摘要浏览/Viewed](#) 44

[全文下载/Downloads](#) 35

[评论/Comments](#)



flows activities. This paper chooses several successive debris flows occurred at the beginning of September 2007 as the research object, and uses the meteorological data from Bomi Meteorological Station, to analyze the effectiveness of antecedent temperatures and rainfalls of the successive debris flows, and formulate its pre-hydrothermal condition. Then, the 9.4 Tianmo debris flows is chosen to disclose its triggering mechanism.

参考文献/REFERENCES

- [1] 李鸿斑, 蔡祥兴. 中国冰川泥石流的一些特征[J]. 水土保持通报, 1989, 9(6): 1-9. LI Honglian, CAI Xiangxing. The glacier debris flow in China [J]. Bulletin of Soil and Water Conservation. 1989, 9(6): 1-9.(in Chinese)
- [2] 中国科学院水利部成都山地灾害与环境研究所, 西藏自治区交通厅科学研究所. 西藏泥石流与环境[M]. 成都科技大学出版社, 1999. Institute of Mountain Hazards and Environmental, Chinese Academic of Sciences and Ministry of Water Conservancy, Scientific Research Institute of Tibet Communications Department. Tibet Debris Flow and Environment [M]. Press of Chengdu University of Science and Technology, 1999.(in Chinese)
- [3] 朱平一, 罗德富, 寇玉贞. 西藏古乡沟泥石流发展趋势[J]. 山地研究, 1997, 15(4): 296-299. ZHU Pingyi, LUO Defu, KOU Yuzhen. Debris flow development trend of Guxiang Ravine, Xizang [J]. Mountain Research, 1997, 15(4): 296-299.(in Chinese)
- [4] 朱平一, 程尊兰, 游勇. 川藏公路培龙沟泥石流输砂堵江成因探讨[J]. 自然灾害学报, 2000, 9(1): 80-83. ZHU Pingyi, CHENG Zunlan, YOU Yong. Research on cause of river blocking by sediment delivery of Peilonggou Gully debris flow in the Sichuan-Xizang highway [J]. Journal of Natural Disasters, 2000, 9(1): 80-83.(in Chinese)
- [5] 铁永波, 李宗亮. 冰川泥石流形成机理研究进展[J]. 水科学进展, 2010, 21(6): 861-866. TIE Yongbo, LI Zongliang. Process in the study of glacier debris flow mechanisms [J]. Advances in Water Science, 2010, 21(6): 861-866.(in Chinese)
- [6] 徐小飞, 马东涛, 何德伟, 等. 贡嘎山地区泥石流形成的水热组合分析[J]. 山地学报, 2007, 25(4): 431-437. XU Xiaofei, MA Dongtao, HE Dewei, et al. Analysis on hydro-thermal combination of debris flow occurrence in Mt. Gongga region [J]. Journal of Mountain Science, 2007, 25(4): 431-437.(in Chinese)
- [7] 余忠水, 德庆卓嘎, 马艳鲜, 等. 西藏波密天摩沟"9·4"特大泥石流形成的气象条件[J]. 山地学报, 2009, 27(1): 82-87. YU Zhongshui, DE Qingzhuoga, MA Yanxian, et al. Analysis of meteorological conditions about "9·4" debris flow in Tianmo-Gully, Bomi County in Tibet [J]. Journal of Mountain Science, 2007, 25(4): 431-437.(in Chinese)
- [8] Marta C, Sara I, Giovsnni M, et al. Recent debris flow occurrences associated with glaciers in the Alps [J]. Global and Planetary Change, 2007, 56: 123-136.
- [9] 康志成, 李焯芬, 马霭乃, 等. 中国泥石流研究[M]. 北京: 科学出版社, 2004. KANG Zhicheng, LI Zhuofen, MA Ainai, et al. Debris flows Study in China [M]. Beijing: Science Press, 2004.(in Chinese)
- [10] 谭炳炎, 段爱英. 山区铁路沿线暴雨泥石流预报的研究[J]. 自然灾害学报, 1995, 4(2): 43-52. TAN Bingyan, DUAN Aiyong. Study on prediction for rainstorm debris flow along mountain district railways [J]. Journal of Natural Disasters, 1995, 4(2): 43-52.(in Chinese)
- [11] 苏鹏程, 刘希林, 郭洁. 四川泥石流灾害与降雨关系的初步探讨[J]. 自然灾害学报, 2006, 15(4):19-23. SU Pengcheng, LIU Xilin, GUO Jie. Primary analysis of relationship between debris flows and rainfalls in Sichuan Province [J]. Journal of Natural Disasters, 2006, 15(4): 19-23.(in Chinese)
- [12] 杨成林. 成都龙门山区泥石流形成特征及其启动特征阈值研究[D]. 北京: 中国科学院研究生院, 2011. YANG Chenglin. Research on Formation Characteristics of Debris Flow and Its Initiation Threshold Value in Longmenshan Mountains of Chengdu[D]. Beijing: Graduate University of Chinese Academic of Sciences, 2011.(in Chinese)
- [13] 李忠勤. 天山乌鲁木齐河源1号冰川近期研究与应用[M]. 北京: 气象出版社, 2011. LI Zhongqin. Recent Study and Application of Heyuan No.1 Glacier in Mt. Tianshan [M]. Beijing: China Meteorological Press, 2011. (in Chinese)
- [14] Iverson R M, Reid M E, Logan M, et al. Positive feedback and momentum growth during debris-flow entrainment of wet bed sediment [J]. Nature Geoscience, 2011, 4: 116-121.
- [15] Rickenmann D, Zimmerma M. The 1987 debris flows in Switzerland: documentation and analysis [J]. Geomorphology, 1993, 8: 175-189.
- [16] Takahashi T. Debris Flows: Mechanics, Prediction and Countermeasures [M]. Taylor & Francis, 2007.

备注/Memo: 收稿日期:2012-11-18;改回日期:2012-12-25。

基金项目:国家自然科学基金重大项目(41190084);中科院成都山地所一三五方向性项目

作者简介:邓明枫(1985-),男,硕士,主要从事泥石流形成机理与防治技术研究. E-mail:dmf@imde.ac.cn
