

许领,戴福初,邝国麟,谭国焕,涂新斌.台缘裂缝发育特征、成因机制及其对黄土滑坡的意义[J].地质论评,2009,55(1):85-90

台缘裂缝发育特征、成因机制及其对黄土滑坡的意义 [点此下载全文](#)

[许领](#) [戴福初](#) [邝国麟](#) [谭国焕](#) [涂新斌](#)

中国科学院地质与地球物理研究所,北京,100029;中国科学院地质与地球物理研究所,北京,100029;香港大学,香港;中国科学院地质与地球物理研究所,北京,100029

基金项目:本文为香港研究资助局项目(编号 RGC HKU7176/05E)的成果。

DOI:

摘要:

黄土滑坡是我国西北地区非常严重的地质灾害现象,后缘裂缝是黄土滑坡典型特征之一。陕西省泾阳南塬自1976年大面积农业灌溉以来,发生了27处50余起黄土滑坡。研究区塬边裂缝发育,滑坡密集分布的太平至蒋刘段目前共分布着28条裂缝,总延展长度为1424m。塬边地形形态控制着裂缝的发育、成因机制,因此,根据裂缝所处塬边地形形态,将南塬裂缝发育模式分为:“U”模式、“W”模式和“Z”模式。裂缝形成后对塬边滑坡的发展产生重要影响,使得坡体土体应力状态接近破坏界面,只需较小的孔压增量和荷载即可诱发滑坡,同时,改变了地表水的入渗途径,极大地增加了地面灌溉和降雨诱发滑坡的概率。同时,裂缝的形成对于黄土滑坡的演化和群体性分布具有重要的意义。

关键词: [黄土台塬](#) [黄土滑坡](#) [台缘裂缝](#) [发育特征](#) [泾阳南塬](#)

Characteristics and Forming Mechanisms of the Plateau Edge Cracks and Their Significance to Loess Landslides [Download Fulltext](#)

Fund Project:

Abstract:

Loess landslide is the most catastrophic geohazard in Northwestern China. Plateau edge crack is one of the representative characteristics for most loess landslides. Groundwater table in the South Jingyang Plateau, Shaanxi Province has been significantly raised since 1976 and more than 50 landslide events have occurred at 27 sites, resulting in large economic loss and numerous deaths. Based on field survey and measurements of cracks at South Jingyang Plateau, it can be concluded that 28 cracks with a total length of 1424 m were developed at the edge of the study area. Based on the topographic features, the cracks can be classified as "U" model, "W" model and "Z" model. At the initial stage, cracks are caused by the accumulated small strain of the slope soils. The present features of cracks can only reflect the present geological conditions. The forming mechanisms of "U" model, "W" model and "Z" model cracks are, thus, very similar to but not the above mentioned mechanism. Cracks developed change soil stress state and make it to be near the collapse surface, and then a small load or water infiltration can induce landslides. Cracks that can collect surface water and increase the possibility of rain or irrigation induced landslides. Cracks also have important significance to loess Landslides evolution and "group distribution" characteristics.

Keywords: [loess Plateau](#) [loess landslide](#) [Plateau edge cracks](#) [Developing characteristics](#) [South Jingyang Plateau](#)

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

您是第692464位访问者 版权所有《地质论评》

地址:北京阜成门外百万庄路26号 邮编:100037 电话:010-68999804 传真:010-68995305

本系统由北京勤云科技发展有限公司设计