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灾害地质

喜马拉雅山地区重大滑坡灾害及其与地层岩性的关系研究

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摘要:

位于青藏高原南部的喜马拉雅山地区,是高原隆升最快的地方,这里内外动力作用异常活跃,是我国重大滑坡灾害最严重的地区之一,重大滑坡灾害对国民经济和社会发展带来了极大危害。本文在对研究区的地质、地理背景进行了详细分析的基础上,利用遥感解译和实地调查相结合的手段,研究了该区重大滑坡灾害的分布及其与地层岩性的关系,将本区地层岩性大致划分为13个工程地质岩组:松散岩组、软弱岩组、软弱岩夹较软弱岩组、软弱岩夹较坚硬岩组、较软弱岩组、较软弱岩夹较坚硬岩组、较软弱岩夹较坚硬岩组、较坚硬岩与软弱岩互层岩组、较坚硬岩夹软弱岩岩组、较坚硬岩夹较软弱岩组、较坚硬岩组、坚硬岩组,发现重大滑坡更容易发生在软弱岩组、较硬岩夹较软弱岩组以及坚硬岩组中,而软弱岩夹较软弱岩组、较软弱岩夹较坚硬岩组中无重大滑坡灾害分布。重大滑坡灾害的上述分布特征,反映出地层岩性与重大滑坡灾害之间的复杂关系,一方面岩性软弱,比较容易发生滑坡灾害;另一方面,岩性越坚硬,地形越高陡,也容易发生重大滑坡灾害。

关键词: 喜马拉雅山 滑坡 遥感 GIS

GREAT LANDSLIDES IN HIMALAYA MOUNTAIN AREA AND THEIR OCCURRENCE WITH LITHOLOGY

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Abstract:

The Himalayan region, locating in the south of Qinghai-Tibet Plateau, is characterized with the fastest uplifting and actively dynamic motion. This area is one of the worst landslides hit areas in China. The serious landslide disasters have brought great harm to the national economic and social development. With the aid of imagery interpretation and field investigation, the paper studies the distribution of the serious landslide disaster and its relationship with lithology, and divides the lithology in the region into 13 engineering geology rock groups as follows: loose rock group, soft rock group, soft rock mixed with secondary soft rock group, soft rock mixed with secondary hard rock group, secondary soft rock group, secondary soft rock mixed with soft rock, secondary soft rock mixed with secondary hard rock group, secondary soft rock mixed with hard rock group, double-layer with secondary hard rock and secondary soft rock group, secondary hard rock mixed with soft rock group, secondary hard rock mixed with secondary soft rock group, secondary hard rock group, hard rock group. Then the paper concludes that the great landslides prompt to occur in the soft rock group, secondary hard rock mixed with secondary soft rock group and hard rock group; however there is few great landslides occurred in the soft rock mixed with secondary soft rock group, secondary soft rock mixed with secondary hard rock group. The distribution characteristics of the great landslides have indicated the complicated relationship between the formation lithology and occurrence of the great landslides: on the one hand, the soft rock area is too weak to slide, on the other hand, the steep and high area dominated with hard rock often tend to slide.

Keywords: Himalaya Mountains Landslide Remote sensing GIS

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