

三峡库区奉节县新城区T2b3泥质灰岩斜坡变形破坏模式的现象学研究

罗元华1, 伍法权2, 常中华2

(1. 北京大学 地球与空间科学学院, 北京 100871; 2. 中国科学院 地质与地球物理研究所, 北京 100029)

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摘要 三峡库区奉节县新城区边坡, 由于其变形破坏的成因机制和破坏堆积体的特殊性质, 成为三峡库区地质灾害防治和边坡防护工程的重中之重, 其主要地层“巴东组”第3段泥质灰岩也成为学术界和工程界多年来争论的焦点问题之一。通过现象学的研究方法, 对泥质灰岩边坡变形破坏成因机制得到如下认识: (1) “巴东组”第3段泥质灰岩岩性脆且易碎, “渗入性”风化导致了大范围岩体强度降低并形成“酥松”结构; (2) 边坡岩层通过切层压裂和沿陡倾和中倾节理的重力滑移剪切破坏, 形成岩层的结构松动和逐级错动的重力弯曲现象, 使边坡岩体的结构强度显著降低; (3) “巴东组”第3段泥质灰岩边坡破坏所形成的堆积物成分均一、完全无规则排列、无滑坡滑动面(带), 不是滑坡和崩塌堆积物, 而是边坡一定范围结构崩溃解体的产物; (4) “巴东组”第3段泥质灰岩边坡的变形破坏过程是由于风化引起岩石力学性质弱化和重力变形导致岩体结构松动, 直至整体结构崩溃的复合过程。

关键词 [边坡工程](#); [泥质灰岩](#); [边坡](#); [重力弯曲](#); [结构崩溃](#)

分类号

PHENOMENOLOGY RESEARCH ON DEFORMATION AND FAILURE MODES OF SLOPES COMPOSED OF ARGILLACEOUS LIMESTONE OF THE THIRD NUMBER OF BADONG GROUP (T2b3) IN NEW SITE OF FENGJIE COUNTY OF THREE GORGES RESERVOIR AREA

LUO Yuan-hua1, WU Fa-quan2, CHANG Zhong-hua2

(1. School of Earth and Space Sciences, Peking University, Beijing 100871, China;

2. Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing 100029, China)

Abstract

Slopes in the new site of Fengjie County, Three Gorges Reservoir area, are the most concerned problems among prevention of geological hazards and protection of slopes, because of their occurrence mechanism of deformation and failure and special property of their deposits. The stratum of the argillaceous limestone of the third number of Badong Group (T2b3), is one of the argumentative focuses among scientific and engineering domain. The following viewpoints on the occurrence mechanism of deformation and failure of argillaceous limestone are obtained with phenomenology research: (1) Property of argillaceous limestone is fragile and rock mass strength decreases and crisp structure are formed by infiltrative weathering; (2) Slope rock mass, by compression cracking and sliding along the steep and moderate steep plane, produces the gravitational bend phenomena of loose structure, one by one cascade, resulting in remarkable decrease of rock structural strength; (3) The deposit composed of argillaceous limestone is almost homogeneous,

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irregular arrangement, without uniform sliding belt. It is not deposit of landslide or rock mass falling, but the product of slope structural decomposition in certain range; (4) Deformation and failure process of argillaceous limestone are resulted from weakness of rock mechanical property caused by weathering and from loose structure caused by gravitational bend; and finally, the whole structure of rock mass is entirely collapsed.

Key words [slope engineering](#); [argillaceous limestone](#); [slope](#); [gravitational bend](#); [structural collapse](#)

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