

滇藏铁路沿线滇藏交界段劈理化带成因探讨及工程效应分析

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中文摘要:滇藏铁路沿线滇藏交界段劈理化带是新近发现的与高山峡谷区河流岸坡密切相关的介于劈理与节理之间的密集破裂构造型式。我们对劈理化带进行了较全面的调查、测绘统计和分析,由此得出,劈理化带呈带状断续分布,规模与河流岸坡规模有关,在金沙江和澜沧江岸坡地带规模巨大,并与微地貌关系密切。另外,“劈理”具有倾角陡、不均匀等特点,“劈理”走向往往与河流方向一致。劈理化带是在内、外动力相互作用下形成,内动力作用可以形成劈理化带,在内动力作用的基础上,河谷地带的外动力作用也可以形成劈理化带,外动力对劈理化带均有后期改造作用。拟建的滇藏铁路将通过许多劈理化带,那里将来可能产生铁路地基大变形、隧道和桥梁大变形、隧道冒顶、隧道渗漏和发生滑坡、崩塌、泥石流灾害。因此,在将来铁路等工程建设和运营中要采取针对性防治措施。

中文关键词:[劈理化带](#) [河床泥化圈层](#) [工程效应](#) [滇藏铁路](#) [金沙江](#) [澜沧江](#)

A Tentative Discussion on the Genetic Mechanism of the Cleavable Zone along the Yunnan Tibet Border Sector of the Yunnan-Tibet Railway Line and an Analysis of its Engineering Effe

Abstract:The newly discovered cleavable zone along the Yunnan-Tibet border sector of the Yunnan-Tibet railway line is a transitional tectonic type with close-spaced fracture between the cleavage type and the joint type, which is closely related to the river slope in the gorge area between high mountains. Based on relatively comprehensive survey mapping and statistic analysis, the authors have reached the conclusion that the cleavable zone is distributed in the discontinuous banded form, with its scale in relation to the river slope scale, so there exist large-sized zones along the Jinsha River and the Lancang River, and that the cleavable zone is in connection with the local micro-landform. In addition, the “cleavage” in the zone is characterized by steep dip angle and uneven interval, with its strike usually paralleled to the local river orientation. The zone was generated by the interaction between the endokinetic process and the exogenous process. This means that the cleavable zone could be generated by the endokinetic process and that on the basis of the endokinetic process, the cleavable zone along rivers could also be formed by the exogenous process. Furthermore, the cleavable zone could be altered by later endokinetic or exogenous process. The scheduled Yunnan-Tibet Railway will pass through many cleavable zones, and there might occur serious deformation of railway foundation, tunnel and bridge, collapse over tunnel, percolation around tunnel, and geohazards such as landslide, collapse and debris flow. It is suggested that we should take appropriate control measures to tackle these problems in the construction and operation processes of the railway and other projects.