岩石力学与工程学报 2006 25 (07): 1370 ISSN: 1000-6915 CN: 42-1397/O3

目次

岩石Kaiser效应测定地应力场的试验研究

陈 强1，朱宝龙2，胡厚田1

(1. 西南交通大学 地质工程系，四川 成都 610031；2. 西南科技大学 土木工程与建筑学院，四川 绵阳 621010)

收稿日期 2005-2-25 修回日期 2005-5-30 网络版发布日期 2006-12-15 接受日期

摘要 用单轴压缩试验测试岩石Kaiser效应特征，进而确定岩体地应力状态的方法，在岩体工程实践中得到广泛的应用。由于运用Kaiser效应法测得的地应力值是新构造应力场最近时期的地应力，对新建西安—南京铁路秦岭越岭地区采用岩石声发射的单轴压缩Kaiser效应法结合微构造法对其地应力场进行研究，得出其现代地应力场总体方向为NE向、各测点处的地应力的具体方向及基本地应力值15 MPa，试验结果与实际情况基本吻合。

关键词 岩石力学 Kaiser效应 地应力 秦岭地区

分类号

EXPERIMENTAL RESEARCH ON MEASUREMENT OF IN-SITU STRESS FIELD BY KAISER EFFECT

CHEN Qiang1，ZHU Baolong2，HU Houtian1

(1. Department of Geological Engineering，Southwest Jiaotong University，Chengdu，Sichuan 610031，China；2. School of Civil Engineering and Architecture，Southwest University of Science and Technology，Mianyang，Sichuan 621010，China)

Abstract

The in-situ stress of rock mass is determined by Kaiser effect of rock under uniaxial compression. This method is applied widely in rock mass engineering. Based on the recent in-situ stress field by Kaiser effect，direction of modern in-situ stress field，direction of in-situ stress in the location of samples and in-situ stress in the three directions are presented by Kaiser effect of rock under uniaxial compression and micro-fault research methodology in Qinling area along Xi¢an－Nanjing Railway. Modern in-situ stress field is in the direction of northeast，and the in-situ stress gets up 15 MPa. The results by Kaiser effect are consistent with those of field test.

Key words rock mechanics Kaiser effect in-situ stress Qinling area

DOI:

通讯作者