报告题目：　　破碎岩体注浆加固强度增长理论
报告人：　　　许宏发
报告人单位：　陆军工程大学爆炸冲击防灾减灾国家重点实验室，南京

摘要：　　　注浆是一种常用的破碎岩体加固措施。其强度的定量确定问题，一直困扰着工程师。为此，我们对破碎岩体注浆前后强度进行了无量纲分析，建立了注浆后结石抗压强度增长率与原岩体比强度的关系函数（1）。基于莫尔库仑强度准则，推导出注浆前后破碎岩体各强度（抗压强度、抗拉强度、内聚力、内摩擦角）参数增长率之间的关系方程（2）。根据 BQ（或 RMR）对破碎岩强度的经验公式，推导出注浆后相应强度参数的增长率（3）。联立求解上述三组表达式，即可得到注浆后破碎岩体各强度参数增长率的定量表达。室内破碎岩体注浆试验表明，试验与理论结果规律相符。

Strength Growth Theory of Grouting Reinforcement for Broken Rock Mass
XU Hong Fa
State Key Laboratory of Disaster Prevention and Mitigation of Explosion and Impact, Army Engineering University of PLA, Nanjing, P. R. China

Abstract：　　Grouting is a common reinforcement measure for broken rock mass. But the quantitative determination of broken rock mass strength has been puzzling engineers. Therefore, we conducted a dimensionless analysis on the strength of broken rock mass before and after grouting. Then, we established the relationship function between the growth rate of compressive strength of grouting concretion and the specific strength of original rock mass (1). Based on Mohr-Coulomb strength criterion, the relationship equations between the parameter growth rates of various strengths (compressive strength, tensile strength, cohesion and internal friction Angle) of the broken rock mass pro- to post- grouting are derived (2). The growth rates of the corresponding post-grouting strength parameters are derived, according to the empirical formula of BQ (or RMR) for the strength of broken rock mass (3). The quantitative expressions of the growth rates of the strength parameters for post-grouting broken rock mass can be obtained by solving the above three sets of expressions. Laboratory grouting tests of broken rock shows that the experimental results are consistent with the theoretical results.