

عنوان مقاله:

Laboratory Investigation on Shear Strength Variation of Joint Replicas Due to Low and High Amplitude Cyclic Displacements

محل انتشار:

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نویسندگان:

M.K. Jafari - IIEES

K. Amini Hosseini - *Tarbiat Moddarres University*

M. Boulon - *University Joseph Fourier, Grenoble*

F. Pellet - *University Joseph Fourier, Grenoble*

H. Jalaly - *Ab-Niro Company*

A. Uromeihy - *Tarbiat Moddarres University*

O. Buzzy - *University Joseph Fourier, Grenoble*

خلاصه مقاله:

The dynamic stability of shallow underground openings in jointed rock masses depends on several parameters that the most important of them for design engineers is the shear strength of rock joints. In this research in order to study the effects of cyclic loading on this parameter, about 50 joint replicas have been tested using triaxial and direct shear testing devices. The saw-tooth identical joint samples were prepared using silicon moulds and special mortar. The samples have been tested in different loading conditions to simulate the effects of small and large earthquakes. Variations of the shear strength with the parameters of cyclic loading and also degradation of asperities have been studied during the tests. The results show considerable changes of shear strength due to the rate of loading, number of cycles, frequency and amplitude of loading. Also the trends of wearing and asperity degradation have been studied in higher levels of cyclic displacement.

کلمات کلیدی:

Shear strength, Roughness, First and Second Order Asperities, Cyclic Behaviour, Damage, Asperity Degradation, Rate of Loading, Number of Cycles, Frequency and Amplitude of Loading

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