

# Slope Earthquake Stability

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# Preface

Researching on the dynamic stability of slope subjected to earthquake is an important project in geotechnical engineering field. However, the engineering geology, soil mechanical, geophysics, and earthquake engineering is involved in this project, which is very difficult, and now there are many problems which must be overcome. Both the special geographical conditions and geologic structures determine that the problem of seismic stability of slope is very conspicuous in China. However, the infrastructures in China is basking in a great boom such as road, railway and water conservancy, which needs higher demands for the seismic design of slopes and the hazard assessments for landslides, and the existing theories and practices can't satisfy this need. Therefore, researching on the seismic stability of slopes is very important, which is useful to reduce the hazards caused by the landslides as soon as possible, produces a favorable living environment for the people living in the mountain area, and ensure the normal and safety operation of the geological engineering facilities.

The content of this book can be divided into four parts, which are written by five authors that Yang Changwei, Zhang Jingyu, Lianjing, Yu Wenying, Zhang Jianjing. The concrete content are introduced synoptically, as follows: Based on the simply review of seismic stability of slopes and the background of Wenchuan earthquake, aiming at the related science problems existing in the current phase, following the dynamic characteristics of slopes subjected to the earthquake, using the methods such as the field investigation, numerical analysis, shaking table test, the monitoring data of the seismic array and the theoretical derivation, taking the covering layer- bedrock type slope which is destroyed seriously, this book reveals that dynamic characteristics of the rock slope, and analysis the formation mechanisms of the landslides, and then proposes the assessing system of the landslide hazards and a method which can consider the three factors of earthquake wave which are duration, amplitude and frequency, respectively.

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This book cites some research results of our research team (such as the Chinese book named **THREE DIMENSIONAL SPACE-TIME ANALYSIS THEORY GEOTECHNICAL EARTHQUAKE ENGINEERING**). A lot of other researchers' results are referred and cited. Authors list the references in the book as comprehensive and complete as possible, but it is hard to omit some references. If there are some mistakes about the references or the other content, please forgive and correct us. Thank you very much!

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