



The Application of Seismic Refracted and Surface Waves for the Studying of Ngraçie Village Landslide, Albania

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Abstract: The applied Seismic methods, today, have an important role in theoretical and applicative studies widely used, which are done through studying the spread of natural and provoked seismic waves in the rocky ground. There are different types of waves and through seismic methods, the spreading velocity, the acceleration of rock particles, amplitude and energy, frequency, phase and spectrum characteristics are determined. Seismic studies use the natural seism-acoustic impulses (*passive seismic*) and artificially provoked waves (*active seismic*). Depending on the geological task, the frequency band of the signal varies from (1÷1000) Hz. Every seismic method, which is supported by a strong physical-mathematical base, closely associated with geological sciences and equipped with modern technology, practically can be applied in different ways. Geotechnical Engineering is a new branch of science, compared to other disciplines like Mechanical or Structural Engineering. In 1933, a strict and organized attitude to understand the soil behavior for Civil Engineering purposes was proposed by *Terzaghi*. Since then, Geotechnical Engineering has evolved much, including the studying of soil related phenomena. So, attention is given to the geotechnical parameters and the methods used for their evaluation. Landslides are among the most destructive geological forces in nature, causing billions of dollars in damage annually. Here, we describe a recent massive landslide in Ngraçie village of Ballësh district.

Key words: *Ngraçie landslide; surface waves; additional tool; geotechnical classification.*

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