

Use Geoelectric Method to discuss the relation between resistivity and environment factor at Jieshou Junior High School in Taoyuan

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Abstract

Landslide are the most common geomorphological hazard at present. For disaster prevention, it's important to estimate the stability of a landslide body. Geoelectric method has been widely used in resource exploration, hydrogeology surveys, and environment geology surveys, also can be used to monitor the preferential flow paths and estimate the stability of landslide body. Electrical resistivity survey was carried out continuously for three months to monitor a hazardous hillslope at Jieshou Junior High School in Taoyuan. This study is focused on discuss the relation between resistivity and environment factor, in order to improve the possibility of predicting landslide.

The monitor site is located at hillslope between the school building and playground. The length of survey line is 67.5 m, including 29 electrodes with 2.5 m space. The electrode array is different from traditional array like Wenner array or Dipole-Dipole array, its placed the transmitter(C) and receiver(P) alternately, and use the same P2. The results of ERT are matching the core which was drilled by Land Engineering Consultants CO. Then calculate the rate of change of resistivity between different dates, we can observe the movement of low resistivity zone like the infiltration process. Compare the observed values to rainfall and air temperature, we can observe after heavy rainfall, observed value would decrease, but no obvious change as air temperature change. All result of this study can be reference for future research of landslide.

References

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