

## Estimation of Hydraulic Conductivity in Montane Regions of Taiwan

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Taiwan is situated on the edge of the Eurasian and Philippine Sea plate. Plate tectonics have created numerous fault lines that crisscross the island. As a result of high density of faults, rock core data with fractures, soft and cohesive gouges, and various lithologies are extensive in boreholes. The hydraulic properties of fractured rocks in Taiwan, therefore, vary with highly disturbed geological structures and lithology. To obtain hydraulic properties of fractured rocks in montane regions of Taiwan, the investigation of vertical variation of the fractures in a borehole is of importance.

This study proposed an empirical HC model for estimating rock mass hydraulic conductivity in montane regions of Taiwan. Four geological parameters including rock quality designation (RQD), depth index (DI), gouge content designation (GCD), and lithology permeability index (LPI) were adopted for establishing the empirical HC model shown in Fig. 1. The measured hydraulic conductivity results and the relationship among the hydraulic conductivity, RQD, DI, GCD, and LPI are presented. Results demonstrate that the empirical HC model may provide a useful tool to predict hydraulic conductivity in montane regions.

Keywords: Hydraulic conductivity; Fractures; Montane regions; Rock mass.

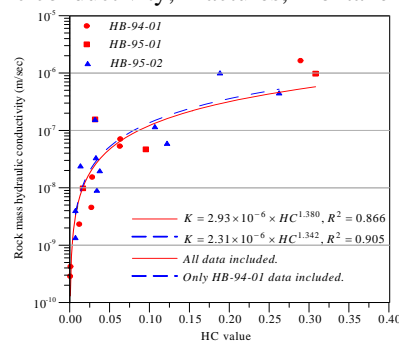


Figure 1. Relationship between hydraulic conductivity and HC-values.

### References

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