**台灣井下岩層物理與力學參數統計之初探**

**Statistic Study of Physical Properties and Mechanical Parameters of Rock Formation from Borewell Data and Core Measurement, Taiwan**

**Supervisor:**

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**Project description:**

Physical properties and mechanical parameters of rock formations along the borewell are essential to the design of geoengineering and drilling engineering. However, it is quite expensive to retrieve cores along the borewell completely and further conduct a series of experiment for investigating physical properties and mechanical parameters. Therefore, it is vital effort to integrate core measurements with downhole logging data for establishing the empirical equation of physical properties and mechanic parameters between borewell data and core measurement via statistic methods.

This work will try to build up the empirical equation between 150 core measurements and 6 downhole logging data on the physical parameters and mechanical parameters and use logging data from other borewells to test the empirical equations. The establishment of this work can provide understanding the inter-relationship among physical properties and mechanical parameters and afford equations to screen the preliminary results before coring and core measurements.

**Project Schedule:**

**1-2 week: paper study; 1-2 week: software/statistics learning; 1-2 week: conducting the numerical experiences; 1-2 weeks: synthetic interpretation; 1 week: finalize and complete the presentation / report.**

**Preferred background:**

Knowledge of Excel, Matlab, and statistics is required.