Evaluation Method of Crack Propagation in Rocks Caused by Change in Weather Conditions

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We have developed a model that evaluates the crack propagation susceptibility in rock by weather change. This model consists of two formulae: one characterizing rock deformation due to changes in temperature and humidity, and the other defining the crack growth rate due to stress changes caused by rock deformation. These formulae were derived from forced deterioration experiments on rock specimens subjected to variations in temperature and humidity. Furthermore, we validated the formulae by using the data on past rockfall occurrences.