以碎形維度描述粗糙岩石裂隙流之扭曲流徑

The flow path is tortuous as a result of the obstacle between the contact asperities of two rough-walled surfaces. The flow channel is controlled by the spatial distribution of asperity contact areas. The spatial distribution of asperity on a rock surface is the essential factor in this seepage behavior. This study focuses on describing the tortuosity of flow path using fractal dimension. In this experimental test, the flow path in epoxy model joints is directly visible and the digital photo is taken. A photo image process is adopted to calculate the box dimension and flow length. The DLA (Diffusion-limited Aggregation) concept, a fractal growth model, is adopted to explain the flow network.