

## Numerical simulation of uniaxial compression of rock using distinct element method

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Numerical simulations of uniaxial compression of rocks are carried out using a distinct element method (DEM), in which cohesion among elements is introduced to treat continuum, such as rock, in order to clarify the phenomena accompanied with the fracture of rocks. As the results, fracturing begins at the corners of rock and propagates inside the rock. After breaking, fracture zone is cone-shaped or oblique, which is similar to those observed in laboratory experiments. Relaxation of the stress also occurs from surface to center of the rock with a little delay of the propagation of fracturing. After the instantaneous crack propagation, the concentration of the stress is almost completely dissolved by the fracture.