

MODELING OF CONCRETE USING LATTICE AND DISCRETE ELEMENT METHOD

Jacek TEJCHMAN

Department of Civil and Environmental Engineering, Gdańsk University of Technology
Gdańsk-Wrzeszcz 80-233, Narutowicza 11/12, Poland

e-mail: tejchmk@pg.gda.pl

ABSTRACT

The paper deals with numerical simulations of fracture in concrete at meso level using two different discrete methods: lattice and DEM. Two and three-dimensional analyses were performed. Attention was paid to the occurrence of cracks. Uniaxial compression and tension tests were simulated under quasi-static and dynamic conditions. The numerical results showed the capability of both methods to simulate the fracture process.

Keywords

Aggregate, concrete, discrete element method, fracture, lattice model.