

عنوان مقاله:

Application of image-processing to crack propagation process identification in concrete under fatigue phenomenon

محل انتشار:

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خلاصه مقاله:

Concrete is the most important material in geotechnical projects and constructions which that due to the cyclical loading and fatigues were always under failures. The fatigue is natural events were occurred in under cyclical loaded materials which causes very complex failures in under low stress and in elastic behavior. Although the concrete behavior and changes under axial loading are studied, but failure mechanism of fatigue and crack propagation on concrete (as the main factor to failure) is on obscurity. The investigation of crack propagation process from the beginning to failure under cyclic axial loading can be identified the fatigue mechanism. This study tired to monitoring and modeling the crack propagation mechanism under the cyclic uniaxial compressive strength (UCS) in axial loading of concrete specimens which help to understands of crack propagation and developed path in the body. For this purpose, the concrete specimens are tested by UCS , take photos repetitively (in 5 loading-unloading cycles) and used the image-processing techniques (IPT) for crack detection, propagation and simulation of the failure in concrete. The simulation results shown the IPT is good performance to crack propagation detections and propagation process is perfectly simulated by IPT.

کلمات کلیدی:

Image-processing techniques, Concrete, Crack Propagation, UCS, Fatigue mechanism

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