

## عنوان مقاله:

Application of digital image correlation method for investigating mode I fracture toughness using cracked Brazilian disk

## محل انتشار:

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## خلاصه مقاله:

The Mode I of fracture of centrally cracked Brazilian disk was investigated using Digital Image Correlation (DIC). Experiments were performed on PMMA polymers subjected to diametric-compression load. The displacement fields were determined by correlation between reference and deformed images, and stress intensity factor was calculated using least square algorithm. The results were compared with the relevant published results obtained from fracture tests on the cracked Brazilian disc specimen and a very good agreement between them was observed. By extending the tests until critical state, Mode I fracture toughness was determined by analyzing the image of specimen captured at a moment before fracture. The results show that digital image correlation is a reliable technique for calculating fracture toughness of brittle material.

## کلمات کلیدی:

Digital image correlation, Fracture toughness, Brazilian disk, Stress intensity factor

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/264067>

