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## Wide range stress intensity factor of semi-circular bend rock specimen with chevron notch

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Rocks are complex materials which contain natural discontinuities. These discontinuities have some effects on the properties of rocks. So, the evaluation of cracks is very important in rocks. Semi-Circular Bend (SCB) specimen is one of the favorite specimens to determine the fracture toughness of rocks. Semi-circular bend specimen with chevron notch has been less considered until now. In this paper, the finite element method is used to analyze SCB specimen. The validity of results is verified by comparing the results with the slice synthesis method. The critical normalized stress intensity factor of the specimen with wide range of geometrical properties is presented. With these results, it's very simple to find the stress intensity factor of different rock specimen of various geometric properties with SCB specimen.

### Biography

Eqlima Mahdavi is a PhD student at Iran University of Science and Technology and Visiting Scholar at Kumamoto University in Japan in Mechanical Engineering. She is working on the methods of fracture toughness determination of brittle material - especially concerning the rocks in her PhD thesis. She has already submitted some papers in reputed journals.

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