

### **Mechanisms of destruction rock and solid-phase mass transfer in cracks**

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Numerous monitoring effects of mining strikes in underground mines are able to the analysis of the dynamics of intense condition developed methods for kinematic analysis of arrays. The focus of attention paid to the reconstruction of deformations of morfostruktura of surface relief of chips, does not entail an assessment of limit States array. The nonlinear mechanics processes of deterioration are essentially to the analysis of stress intensity factors  $K_1$ ,  $K_2$ ,  $K_3$  at the ends of the cracks and as the main criterion was adopted by J-integral Cherepanov-Eselbi-Rice. Under this criterion to the destruction of the kinetic energy to fracture treated with increasing mass transfer characteristics from product fragmentation. Experiments performed to determine crack resistance and specific surface energy of destruction of marble, limestone, granite and serpentinite on a 3-point bending cyclic prismatic designs draw attention to manifestations of solid phase mass transfer for the first time registered, synchronous with growth of cracks. Material emissions occur in the form of shots in connection with movement and zone extended development before the before the destruction of the tip of the cracks, the disclosure of the coast cracks clearly lags behind. The evaluation of the energy balance analysis of crater-like form of destruction around the gas-liquid inclusions in obsidiane on the road cracks, considered as a fundamental tool of destruction phase. Implementation of the latter also explains the transfer of material beyond any limitations, the experimentally confirmed by acts of the local destruction of rocks, cataclastic current when you reset the load during the test specimens for strength in uniaxial loading.

*Key words: Rock Mechanics, crack, phase-explosion, nonlinear mechanics*

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