



## Nonsmooth Optimization Algorithms in Some Problems of Fracture Dynamics

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### ABSTRACT

Mathematical statement of elastodynamic contact problem for cracked body with considering unilateral restrictions and friction of the crack faces is done in classical and weak forms. Different variational formulations of unilateral contact problems with friction based on boundary variational principle are considered. Nonsmooth optimization algorithms of Udzawa' s type for solution of unilateral contact problem with friction have been developed. Convergence of the proposed algorithms has been studied numerically.

### KEYWORDS

Unilateral Contact, Friction, Crack, Variational Principles, Boundary Variational Functional, Nonsmooth Optimization Algorithm

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