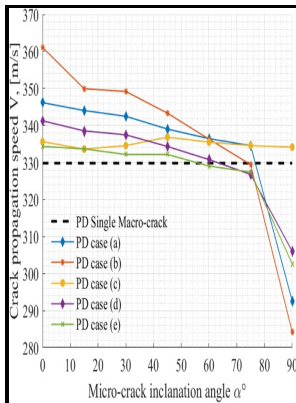


# Dynamic crack propagation in brittle materials - analyses based on fracture and damage mechanics

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## Dynamic Initiation and Propagation of Multiple Cracks in Brittle Materials

Automatic mesh generations for these nonself-similar fast fracture phenomena are extremely difficult.

## Computational modeling of crack propagation in real microstructures of steels and virtual testing of artificially designed materials

Fictitious crack models: A classification approach.

### Variable

We emphasize that, while the characteristic function  $\kappa(t)$  introduced above was defined to be a function of time  $t$ , the functional dependence can be extended to include any other dependent or independent variables depending on the specific physical problem. Continuum damage modeling of dynamic crack velocity, branching, and energy dissipation in brittle materials.

## Computational modeling of crack propagation in real microstructures of steels and virtual testing of artificially designed materials

On the other hand, as shown by Rose 1976b, the repeated disturbances from one crack edge on the propagation of the other has a very small effect on the motion of the crack edges. This is a consequence of the neglect of higher order time derivatives in the expression for  $G$ . Crack arrest will occur when  $G$  becomes lower than  $R$  and, consequently, no kinetic energy is available for crack growth.

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