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On the pure jump nature of crack growth for a class of pressure-sensitive elasto-plastic materials. (English) [Zbl 07418791](#)

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Summary: In the framework of a model for the quasistatic crack growth in pressure-sensitive elasto-plastic materials in the planar case, we study the properties of the length $\ell(t)$ of the crack as a function of time. We prove that, under suitable technical assumptions on the crack path, the monotone function ℓ is a pure jump function.

MSC:

74A45 Theories of fracture and damage

74C05 Small-strain, rate-independent theories of plasticity (including rigid-plastic and elasto-plastic materials)

49S05 Variational principles of physics

49K10 Optimality conditions for free problems in two or more independent variables

Keywords:

fracture mechanics; plasticity; quasistatic evolution; rate-independent problems

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