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Existence of parameterized BV-solutions for rate-independent systems with discontinuous loads. (English) [Zbl 1458.35439](#)

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Summary: We study a rate-independent system with non-convex energy in the case of a time-discontinuous loading. We prove existence of the rate-dependent viscous regularization by time-incremental problems, while the existence of the so called parameterized BV -solutions is obtained via vanishing viscosity in a suitable parameterized setting. In addition, we prove that the solution set is compact.

MSC:

[35R05](#) PDEs with low regular coefficients and/or low regular data

[49J40](#) Variational inequalities

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

[35Q74](#) PDEs in connection with mechanics of deformable solids

[35D40](#) Viscosity solutions to PDEs

[49J45](#) Methods involving semicontinuity and convergence; relaxation

Cited in 1 Document

Keywords:

rate-independent system; discontinuous load; parameterized BV-solution; time-incremental minimum problems; vanishing viscosity limit

Full Text: [DOI](#) [arXiv](#)

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