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Existence and uniqueness results for a class of rate-independent hysteresis problems. (English) [Zbl 1121.34052](#)

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Summary: In this paper, we address the problem of existence, approximation, and uniqueness of solutions to an abstract doubly nonlinear equation, modeling a rate-independent process with hysteretic behavior. Models of this kind arise in, e.g. plasticity, solid phase transformations, and several other problems in non smooth mechanics. Existence of solutions is proved via passage to the limit in a time-discretization scheme, whereas uniqueness results are obtained by means of convex analysis techniques.

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MSC:

[34C55](#) Hysteresis for ordinary differential equations
[47J40](#) Equations with nonlinear hysteresis operators
[49J40](#) Variational inequalities
[74N30](#) Problems involving hysteresis in solids
[34G25](#) Evolution inclusions

Cited in **1** Review
Cited in **26** Documents

Keywords:

[rate-independent models](#)

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