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## SECOND-ORDER EVOLUTION INCLUSION WITH MAXIMAL MONOTONE OPERATOR AND NONCONVEX PERTURBATION

### Communication Info

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(1) *Differential inclusion*

(2) *Maximal monotone operator*

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### Abstract

This paper investigates the existence of absolutely continuous solutions for a class of perturbed second-order differential inclusions governed by time- and state-dependent maximal monotone operators. The analysis is carried out in a Hilbert space setting, with initial data prescribed on a past interval. The perturbation depends simultaneously on time, delayed states, and velocities, and is allowed to take nonconvex values. The results extend the existing theory of second-order sweeping processes and monotone evolution inclusions by accommodating both explicit time-state dependence of the governing operator and nonconvex perturbations. This broader framework enhances applicability to complex dynamical systems arising in mechanics, control, and optimization.

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