Key words: nonsmooth mechanics, nonsmooth dynamics, contact, friction, impact, fracture, plasticity, vibro-impact, time-domain integration schemes, numerical optimization

ABSTRACT

Since the seminal work of M. Jean, G. Maier, J.J. Moreau, P.D. Panagiotopoulos, and M. Schatzman among others, nonsmooth mechanics and dynamics is a flourishing research topic, where a particular attention is paid to the efficient and mathematically rigorous treatment of the discontinuities that arise in the evolution of mechanical systems. The extensive use of differential measures, set-valued mappings, convex and variational analysis is the common theoretical ground of the nonsmooth framework, which has many applications in computational mechanics such as mechanics with unilateral contact, friction and impacts, plasticity and fracture. These phenomena are ubiquitous in many nonlinear mechanics fields: multi-body systems, granular and divided materials, contact mechanics, nonlinear solid mechanics and nonsmooth modal analysis.

The focus of this mini-symposium is on computational methods for nonsmooth mechanics with three main aspects: a) numerical modeling, b) time-domain integration techniques and c) time-discretized problem solvers. For each of them, we invite original contributions in any field of applications ranging from nonlinear dynamics of finite-dimensional systems to nonlinear continuum mechanics.

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REFERENCES
