COMPUTATIONAL METHODS IN IMPACT ENGINEERING

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ABSTRACT

The aim of the "Computational Methods in Impact Engineering" mini-symposium is to recognize the increasing role of the computation methods in Impact Engineering. It is now established that computational tools are indispensable to augment experimental techniques for the analysis of complex systems under dynamic loading. Many new computational techniques are currently being developed and new applications in the fields of impact and shock loadings are emerging. This mini-symposium will bring together engineers and scientists working in the area of Computational Impact Engineering.

Topics of interest include (but are not restricted to) the following:
- Response of structures to dynamic and explosive loading
- Development of novel protective structures
- Advances in Computational methods in Impact Engineering
- Constitutive modeling and homogenization methods for structures under dynamic loading
- Constitutive models for the dynamic response of soft tissue
- Novel approaches in computational Fluid-Structure Interaction such as coupled Eulerian/Lagrangian methods
- Dynamic buckling and post-buckling analysis under impact
- Failure mechanisms of structures under impact loading
- Prediction of fracture at high strain rates
- New approaches in Dynamic Failure simulations, such as Discontinuous enrichment in finite elements and Cohesive formulations.
- Remeshing techniques for ballistics

- Computation-assisted design optimization for crashworthiness
- Hybrid computational-experimental methods in dynamics

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