16th World Congress on Computational Mechanics and 4th Pan American Congress on Computational Mechanics

July 21-26, 2024, Vancouver Convention Centre, Vancouver, British Columbia, Canada

COMPUTATIONAL MECHANICS IN HIGH-STRAIN RATE AND IMPACT ENGINEERING

Patrice Longère[*12] and Eric Deletombe*[3]

[1]*ISAE-SUPAERO*
[2]*Institut Clément Ader*
[3]*ONERA*

MINISYMPOSIUM

In the civil and military, land, naval and aerospace transportation sectors as well as in the building and energy sectors, crash, collision, blast and impact are typical loading cases to be accounted for when designing or verifying engineering structures regarding accidental overloading or terrorist attack induced potential failure.
From the computational perspective, the challenge is to solve space and time multi-scale, multi-phase and multi-physic initial-boundary value problems, and accordingly to develop or adapt
* methods of multi-media interaction or equivalent loading condition,
* advanced rate and temperature dependent models applicable to high strain rate or/and high pressure,
* methods of space and time discretization, including FEM, FVM, DEM, SPH and their combination,
* numerical simulation involving crash, collision, blast or impact.

This mini-symposium aims at providing a forum for discussing new scientific and industrial challenges and developments in the field of computational mechanics in impact and blast engineering.