

# Structural integrity under extreme loads

## Topic: High-fidelity models

**TITLE:** Numerical simulations of healthy and damaged ceramic and composite panels subjected to ballistic impact.

### RESEARCH BACKGROUND:

Body armor materials have evolved to provide improved protection while reducing weight. Although ballistic impact is a primary concern, the performance of body armor can be affected by minor impacts over time. Studying the aging and residual resistance of ceramic body armor is crucial for optimizing its life cycle.

### RESEARCH ACTIVITIES:

1. Bibliographic research on state-of-the-art methods for simulating complex structures subjected to high-velocity impacts.
2. Numerical simulations of ideal and damaged ceramic plates.
3. Numerical simulations of ideal and damaged multilayer plates.

**METHODOLOGY:** Numerical

**DURATION:** 6-9 months

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