Structural integrity under extreme loads

Topic: High fidelity models of composite materials

TITLE: Numerical assessment of military helmets subjected to blast load

RESEARCH BACKGROUND:
Blast loading is a critical scenario that pose a threat to the personnel that wear a helmet which may be involved in accidents that lead to explosions. Helmets are a complex device whose design is defined by multiple requirements and have several constraints.

RESEARCH ACTIVITIES:
1. Literature review on the effect of blast waves on helmet and the head.
2. Numerical modelling of blast loading on a helmet
   (FE models of headform and helmet already partially developed from previous works)
3. Study of different concepts for blast effects mitigation
4. Numerical assessment of aforementioned new concepts

METHODOLOGY: Numerical

DURATION: 9 months

CONTACTS:
andrea.manes@polimi.it
marco.giglio@polimi.it