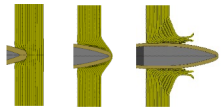
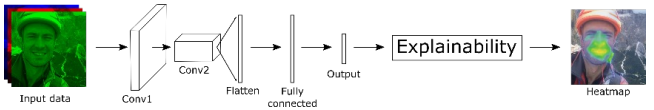
Structural integrity under extreme loads

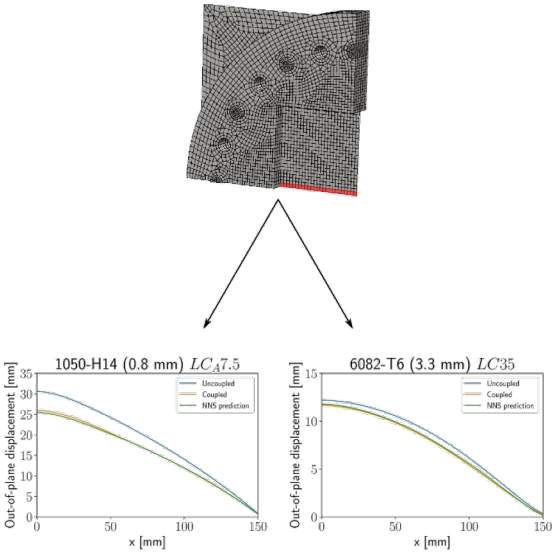




Topic: High fidelity models and machine learning

TITLE: Numerical characterisation of blast loaded structures and development of machine learning-based surrogate models.

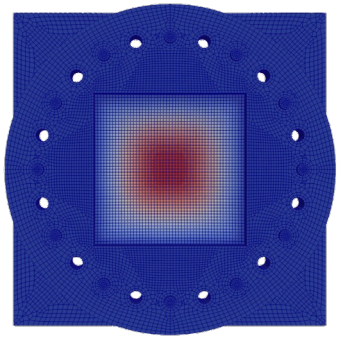
RESEARCH BACKGROUND:
Blast loading represents a critical extreme loading condition for several structures. Numerical simulations of such scenarios may be combined with state-of-the-art machine learning methods to improve computational efficiency and accuracy.

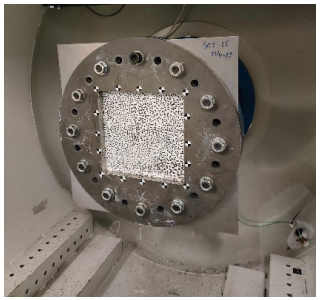


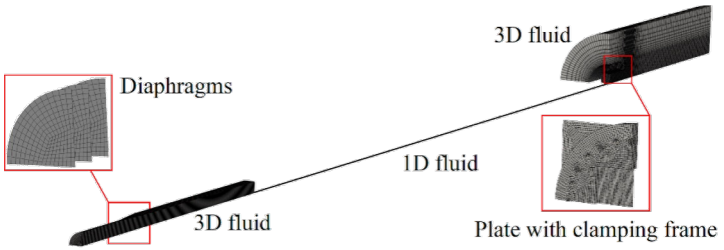
RESEARCH ACTIVITIES:
1. Numerical characterisation of blast loaded structures. Numerical simulations may be carried out using the finite element method and/or computational fluid dynamics (prior knowledge of computational fluid dynamics is not required).
2. Development of machine learning methods to replace computationally expensive numerical simulations (no prior knowledge of machine learning required).
3. Testing of the methodology on experimental and numerical data.

METHODOLOGY: Numerical

DURATION: 6-9 months







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