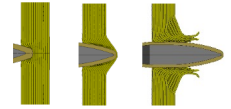


# Structural integrity under extreme load



Topic: In-depth investigations on metallic structures

•**TITLE:** Multiscale investigation on the fracture behaviour of metallic materials under corrosion

•**RESEARCH BACKGROUND:**

•The corrosion of the metallic materials is considered a critical issue in engineering field and requires further investigation especially when it create damage that are affected by subsequent fatigue loads. The microstructure of metals also has a significant influence. Considering both corrosion and the microstructure can provide new insights for the related study on fracture behaviour of the metals.

•**RESEARCH ACTIVITIES:**

1. Perform fatigue and fracture tests on metal samples/structures (aluminium and steel) affected by damage due to different methods of corrosion
2. Bridge mechanical properties and features from different scales
3. Study different modelling strategies in different scales on fracture behaviours of metals (optional)

•**METHODOLOGY:** Experimental – Numerical

•**DURATION:** 9 months

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