

14th International Fatigue Congress (IFC14)

Proposed session

Title: Fatigue and Fracture of Weldments

Session Organizers

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Abstract

Weldments play an important role in the design and fabrication of metallic components and large assemblies in strategic industrial sectors, such as construction, transportation, energy, etc. Most welded joints are to be designed against fatigue failure during their service life, whereas crack propagation has to be included into consideration. Furthermore, the energy transition poses new challenges to the structural integrity of weldments, such as the influence of hydrogen in line pipes or the increasing thickness in large monopiles for wind energy.

This symposium aims to provide a forum for the discussion of contemporary challenges in the fatigue and fracture of weldments.

Topics of interest include, but are not limited to:

- Experimental characterization of the fatigue life under constant and variable amplitude loading
- Testing and fatigue assessment of large assemblies (e.g. monopiles, offshore jackets)
- Influence of environmental conditions (e.g. corrosion, hydrogen)
- Experimental techniques for life extension (e.g. HFMI, weld repair)
- Experimental and numerical analysis of residual stresses
- Fracture mechanics-based fatigue assessment
- Fracture avoidance