



**14th International Conference on Fracture
Rhodes, Greece, June 18-23 2017**

Invitation to Mini-Symposium on:
**Advances in Local Approach Methods
for Integrity Assessment**

Organised Jointly by:
The University of Manchester and University of Sao Paulo

Local approaches (LA) to cleavage and ductile fracture of engineering materials have been gaining popularity during the last 30 years amongst academic researchers and industrial practitioners alike. They are considered as advanced options for demonstrating safety in practical cases where global approaches are either inadequate or judged to be overly conservative. By taking into account microstructural features and local failure mechanisms, to the extent of current experimental knowledge, LA approximate increasingly well the energy dissipation mechanisms in the fracture process zone ahead of a macroscopic crack, thus offering increasingly accurate predictions for crack behaviour and structural integrity. This mini-symposium is dedicated to advances in LA, which: (1) improve our understanding of the link between LA mathematical formulations and materials' microstructure and local mechanisms; (2) provide new LA formulations or computational techniques; and (3) demonstrate new experimental validations of LA. The aim is to provide a *common platform* for researchers and engineers developing and applying LA methods to facilitate exchange of advanced practices and knowledge. The following topics are given for orientation:

- Formulations of local approaches to cleavage and ductile fracture
- Material characterisation for LA calibration and development
- Computational methods and LA parameters calibration
- Validation of LA with macroscopic experiments
- Effects of load and material history on LA performance
- Application of LA to weldments and heterogeneous materials

Organisers:

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Please record your intention to contribute by submitting a provisional title to one of the organisers by the 25th August 2016 for planning purposes!

**Full abstracts will be due by the 31st October 2016 on the conference webpage
<http://www.icf14.org>**

