



XIX International Colloquium on Mechanical Fatigue of Metals

Fatigue damage represents one of the most important types of damage to which structural materials are subjected in normal industrial services that can finally result in a sudden and unexpected abrupt fracture. Since metallic alloys are still today the most used materials in designing the majority of components and structures able to carry the highest service loads, the study of the different aspects of metals fatigue attracts permanent attention of scientists, engineers and designers.

The first International Colloquium on Mechanical Fatigue of Metals (ICMFM) was organized in Brno, Czech Republic in 1968. Afterwards, regular Colloquia on Mechanical Fatigue of Metals started in 1972 also in Brno and were originally limited to participants from the countries of the former “Eastern Block”. They continued until the 12th Colloquium in 1994 (Miskolc, Hungary) every two years. After a break twelve years long, the Colloquia restarted in 2006 (Ternopil, Ukraine),

followed by the ones in 2008 (Varna, Bulgaria), 2010 (Opole, Poland), 2012 (Brno, Czech Republic), 2014 (Verbania, Italy), until the last one, which was organized in 2016 in Gijón (Asturias), Spain, with the aim of opening the Colloquium to participants from all countries interested in the subject of fatigue of metallic materials.

The XIX International Colloquium on Mechanical Fatigue of Metals (ICMFM XIX) will be organized in 5-7 September 2018, in the Faculty of Engineering of the University of Porto, in the City of Porto, located at seaside in the northwest region of Portugal. This International Colloquium is intended to facilitate and encourage the exchange of knowledge and experiences among the different communities involved in both basic and applied research in this field, the fatigue of metals, looking at the problem of fatigue from a multiscale perspective, and exploring analytical and numerical simulative approaches, without losing the applications perspectives.

Local Organizing Committee (Co-Chairs)

.Abílio de Jesus (FEUP/INEGI, Portugal)
.António A. Fernandes (FEUP/INEGI, Portugal)

.José António Correia (FEUP/INEGI, Portugal)
.Rui Caçada (FEUP/CONSTRUCT, Portugal)

Important Dates

Colloquium ICMFM XIX:
05-07 September 2018

Start of Symposia and Abstracts Submission:
18th September 2017

Deadline for Symposia Submission:
30th November 2017

Deadline of Abstracts Submission:
31st January 2018

Notification of Abstracts Acceptance:
28th February 2018

Registration Opening:
1st October 2017

Deadline for Early Registration:
31st March 2018

Deadline for Paper Submission:
31st May 2018 (optional)

Scientific Program

(Contributions are accepted but not limited to the following topics)

.Cyclic plasticity and internal structure
.Ultra-low, low-, high- and giga-cycle fatigue
.Mechanisms of fatigue damage
.Fatigue thresholds
.Short and long crack growth
.Fatigue life prediction
.Fatigue behaviour modelling and simulation
.Creep-fatigue interactions
.Probabilistic fatigue and fracture
.Failure analysis and case studies
.Applications and design codes
(*e.g. pressure vessels, metallic bridges, wind towers, offshore structures, etc*)

.Fatigue life extension
.Damage evaluation and fatigue design
.Variable amplitude loading
.Thermal fatigue
.Multiaxial fatigue
.Fatigue in biomaterials
.High temperature fatigue
.Fatigue-corrosion
.Environmental assisted fatigue
.Influence of manufacturing processes on fatigue behaviour
.Structural integrity assessments accounting for fatigue

ICMFM XIX

