

4th International Workshop
on
Recent developments in
Thermo-Mechanical Fatigue
(TMF-Workshop 2019)
Experimental data, modelling, applications,
test procedures, standardisation

November 13th - 15th, 2019
**Federal Institute for Materials
Research and Testing (BAM)**
Berlin, Germany

Background

Components in the Aerospace, Power and Automotive engineering sectors are frequently subjected to cyclic stresses induced by thermal fluctuations and mechanical loads. For the design of such components reliable material property data are required which need to be acquired using well accepted and reproducible testing procedures.

The first TMF-Workshop was held at BAM in 2005 on the occasion of the development of a European Code of Practice for TMF testing. It brought together approx. 70 European and international experts. The second TMF-Workshop was held in 2011 with approx. 100 attendees and the 3rd TMF-Workshop was held in 2016 with 90 participants from 17 countries.

The 4th TMF-Workshop will be held in conjunction with the final meeting of the research project **DevTMF** which deals with TMF crack growth and is funded by the European Commission under Horizon 2020 and Clean Sky 2. The intention of the present event is to continue the exchange of knowledge in the TMF regime. It provides a forum to present and discuss all recent developments in the field of thermo-mechanical fatigue.

The European DevTMF Project

In this project the experimental techniques of TMF crack growth and the predictive tools to characterize the thermo-mechanical fatigue behaviour and damage mechanisms are being developed in two Nickel-base superalloys. It has 3+1 project partners, a run-time of 48 months and ends in January 2020. The partners are Linköping University Sweden, Swansea University, UK, Nottingham University, UK and Rolls Royce plc, Derby, UK. The achievements of the project will be presented on the workshop.



Who should attend

The workshop is aimed at engineers, scientists and technical staff of research institutes and industry who have an interest in the numerous aspects of thermo-mechanical fatigue.

Workshop Topics

- TMF crack growth
- TMF crack growth measurement
- TMF life and crack growth models
- TMF of steels, cast irons, aluminium-, titanium-, nickel base and other alloys
- Cyclic stress strain behaviour at TMF
- Comparison of TMF and LCF life
- TMF and superimposed HCF
- TMF and creep interactions
- TMF and environmental interactions

- Multiaxial TMF
- TMF of coated materials
- TMF and thermal fatigue of components
- TMF damage mechanisms
- Interpretation of TMF data
- Force or strain controlled TMF testing
- Service-cycle TMF testing
- TMF test procedures and standardisation
- Applications

Language

The Workshop language will be English.

Submission of Abstracts

Attendees who wish to give an oral or poster presentation are invited to submit a one-page abstract (A4) containing title, list of authors and the outline of the intended contribution until May 31st, 2019. One figure may be included. Authors will be notified of abstract acceptance until July 31st, 2019. A book of abstracts will be available during the workshop.

Publication

It is intended to publish papers of the Workshop in the International Journal of Fatigue. The full papers will be due at the conference. After peer review, the papers will be published in a virtual special issue of the journal which can be downloaded at www.sciencedirect.com. Instructions for paper preparation will be published on the Workshop-website on time.

Workshop fee and registration

The moderate registration fee will be announced later. It includes refreshments, buffet dinner, copies of book of abstracts. The conference proceedings are intended to be published as a virtual special issue in a reviewed journal.

For more information please visit the Workshop website at <http://www.tmf-workshop.bam.de>.

Scientific Committee

H. Klingelhöffer, BAM, Berlin, D (Chairman)
E. Affeldt, MTU Aero Engines, Munich, D
M. Bache, CEO Swansea Mat Res Test Ltd, UK
T. Beck, University Kaiserslautern, D
H.-J. Christ, University Siegen, D
S. Holdsworth, EMPA, CH
C. Hyde, Nottingham University, UK
M. McGaw, McGaw Technology, Ohio, USA
J. Moverare, Linköping University, Sweden
J. Olbricht, BAM, Berlin, D
L. Remy, ENSMP, Paris, F
J. Rouse, Nottingham University UK
S. Stekovic, Linköping University Sweden
M. Whittaker, Swansea University, UK

Important dates and deadlines

- Submission of abstracts May 31st, 2019
- Notification of authors July 31st, 2019
- Registration starts Aug 01st, 2019
- Workshop registration Oct 15th, 2019
- Full papers Nov 13th, 2019

HTMTC

The High Temperature Mechanical Testing Committee (HTMTC) is a thematic network and provides a forum for discussion to improve the techniques and procedures used for high temperature testing of materials and to disseminate this information to the materials community. It operates as technical committee 11 of the European Structural Integrity Society (ESIS TC11 – High Temperature Mechanical Testing).

More information on the HTMTC can be found at www.htmtc.net
<http://www.structuralintegrity.eu>

DVM

The workshop will be held in cooperation with the German Society for Materials Research and Testing e.V. (DVM). More information on DVM can be found at www.dvm-berlin.de

Venue

The workshop will take place in the Ludwig-Erhard-Conference Hall at the Federal Institute for Materials Research and Testing in Berlin. The German Capital provides numerous opportunities for touring historical sites, museums, concerts, theatres and for shopping. For an overview of the opportunities, please check

<http://www.berlin.de>

Arrival

By plane: Airport Tegel (TXL)
Airport Schönefeld (SXF)
By train: from all directions by using the fast InterCityExpress (ICE), InterCity (IC), EuroCity (EC)

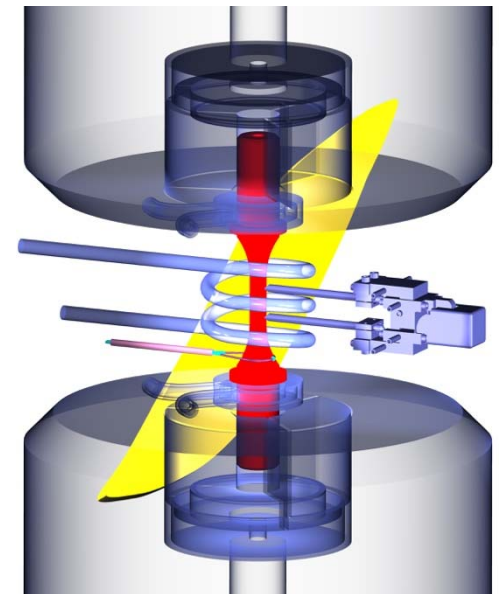
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1st circular and call for papers



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