

Berlin Sightseeing

Friday, July 1, 2011 (After-Conference-Day)

Experience the blend of present, past and future that is so typical for Berlin! You will see all important places of interest and get a good overall impression of the German capital.

VHCF5 Sightseeing Fee EUR 20,00

Social Events

Will be announced at the Conference Website.

Accommodation

Registration fee does not include hotel accommodation. Participants are responsible for booking their accommodation accordingly. A block-booking of hotel rooms at reduced rates is currently being held at three hotels in Berlin. We recommend that you book your room as soon as possible referring to the password "DVM"! All VHCF5 participants are asked to book their accommodation on their own responsibility. Please contact the hotels directly.

Steigenberger Hotel Berlin (Conference Location)

Los-Angeles-Platz 1, 10789 Berlin, Germany
Phone +49 30 21 27 -712, Fax +49 30 21 27 -797
convention@berlin.steigenberger.de, www.berlin.steigenberger.de
Single room: EUR 79,00 (including breakfast)
Double room: EUR 98,00 (including breakfast)

Hotel ibis Berlin City West

Brandenburgische Straße 11, 10713 Berlin, Germany
Phone +49-(0)30-86202-0, Fax +49-(0)30-86202-222
h3751-re@accor.com, www.ibishotel.com, www.accorhotels.com
Single room: EUR 67,00 (including breakfast)

Motel One Berlin-Ku'Damm

Kantstraße 7 - 11a, 10623 Berlin, Germany
Phone +49/30/315 17 36-0, Fax +49/30/315 17 36-10
berlin-kudamm@motel-one.com,
www.motel-one.com/de/hotels/hotels-berlin.html
Single room: EUR 66,50 (including breakfast)

A large choice of other hotels can be found at www.berlin.de.

Liability

DVM as organiser is not liable for any changes in the programme due to circumstances beyond their control. The organisers are not liable for any losses, accidents injuries to persons or damage to property of any kind. This does not affect the liability of persons or companies charged with providing the relevant service. The sole court of jurisdiction is Berlin.

Registration

Registration is through the VHCF5 Registration Access at www.vhcf5.de (payment by bank transfer or credit card). Registration for the conference is mandatory for the presentation of a lecture and the publication of the manuscript in the proceedings.

Early Registration fees up to March 31, 2011 (extended to April 10, 2011)

| | |
|---|------------|
| Participant (Non-Member) | EUR 890,00 |
| Member of DVM | EUR 790,00 |
| Speaker (1 person per contribution, registration and payment before March 31, 2011) | EUR 690,00 |

Regular/On-site Fee after March 31, 2011

| | |
|--------------------------|------------|
| Participant (Non-Member) | EUR 990,00 |
| Member of DVM | EUR 890,00 |

Accompanying Person EUR 200,00

Payment methods and Bank Accounts

All payments have to be made in Euro (€) preferred by bank transfer.

Deutscher Verband für Materialforschung und -prüfung
Postbank Berlin
Bank Code No.: 100 100 10; Account No.: 0 392 903 109
IBAN: DE71 1001 0010 0392 9031 09; BIC: PBNKDEFF

Deutscher Verband für Materialforschung und -prüfung
Berliner Sparkasse
Bank Code No.: 100 500 00; Account No.: 1 220 012 188
IBAN: DE61 1005 0000 1220 0121 88; BIC: BELADEBE

Confirmation

Registration is binding. Confirmation will be sent to the participant by e-mail. Payment of the participation fee is to be carried out immediately to the full extent without deduction. Charges which may be connected with the payment cannot be carried by DVM and must be settled by the invoice recipient. A definite confirmation of registration will be sent out after the full amount has been credited to one of our accounts. Please bring your confirmation letter or payment document to the registration desk.

Cancellations

All changes or cancellations must be submitted in writing (e-mail, telefax or airmail). In case of cancellation after March 31, 2011, we are allowed to charge 50% of the registration fee plus EUR 25,00 service charge. Cancellations received after May 01, 2011, are not refundable. Name substitutions will be accepted at any time at no extra charge.

Visa

Participants who need a visa for Germany should obtain this at the German Embassy of their country. The visa always has to be applied for by the person to travel to Germany at the competent German mission abroad covering the place of residence.

General Information

Details on the Conference Venue (How to get to and Parking), Public Transfer in Berlin, Opening Hours of the VHCF5 Registration Desk, Special Instructions for Speakers, Services, Recommendations for Private Cultural Highlights (to plan already now see: www.berlin.de/international) as well as for After Conference Tours will be published soon at:

www.vhcf5.de



VHCF5 is an Interquadrennial Conference of the "International Congress on Fracture: World Academy of Structural Integrity"



European Structural Integrity Society



The Federation of European Materials Societies



Deutsche Gesellschaft für Materialkunde e. V., DE



The Minerals, Metals & Materials Society, US



The Society of Materials Science, JP



Société Française de Métallurgie et de Matériaux, FR



Gruppo Italiano Frattura, IT



Forum for Engineering Structural Integrity, UK



The Institute of Materials, Minerals and Mining, UK

Third Circular

VHCF5

Fifth International Conference on Very High Cycle Fatigue



Interquadrennial Conference of the "International Congress on Fracture: World Academy of Structural Integrity"

June 28 – 30, 2011
Berlin, Germany



DEUTSCHER VERBAND FÜR MATERIALFORSCHUNG UND -PRÜFUNG e.V.
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www.vhcf5.de

Chairmen

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Organization / Technical Information

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vhcf5@dvm-berlin.de; www.vhcf5.de

Local Scientific Committee

| | |
|----------------------------|---------------------------|
| H. Bomas, Bremen | D. Eifler, Kaiserslautern |
| J. Gegner, Schweinfurt | H. W. Höppel, Erlangen |
| S. Issler, Schwieberdingen | O. Kraft, Karlsruhe |
| B. Pyttel, Darmstadt | M. Sinapius, Köln |
| C. M. Sonsino, Darmstadt | H. Waltermann, Remscheid |
| M. Zimmermann, Siegen | |

International Advisory Committee

| | | |
|--------------------|----------------------|-----------------------|
| J. E. Allison, US | M. Bacher-Hoehst, DE | C. Bathias, FR |
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| G. Harlow, US | Y. Hong, CN | M. N. James, UK |
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| T. Nakamura, JP | A. Navarro, ES | Y. Ochi, JP |
| T. Palin-Luc, FR | P. C. Paris, US | J. Petit, FR |
| R. O. Ritchie, US | T. Sakai, JP | K. Schulte, DE |
| A. Shanyavskiy, RU | K. Shiozawa, JP | S. Stanzl-Tschegg, AT |
| K. Tanaka, JP | Q. Y. Wang, CN | H.-W. Zoch, DE |

Aims and Scope

Many components as for instance automobile and motor parts, train wheels, tracks, bridges, medical instruments, heavily stressed power plant components such as engines and rotors, offshore structures or wind energy plants have to withstand a number of cycles higher than 10^7 . These high numbers of cycles can be a result from high frequency or a long product life.

The need to reduce environmental impact and the need for increased economic efficiency are driving the design of new components and systems in which fatigue lifetimes as long as 10^9 to 10^{10} cycles or even more are required.

Thus, there is global interest in, and need for, improved understanding of the fatigue behavior of structural materials in the very high cycle fatigue (VHCF) regime.

The Fifth International Conference on Very High Cycle Fatigue resumes the successful series of previous conferences (1998/Paris, 2001/Vienna, 2004/Kusatsu, 2007/Ann Arbor) on the latest very high cycle fatigue research.

The objective of the conference is to provide a worldwide platform for scientific communication, discussion and activities for all those interested in both fundamental aspects and practical applications.

The conference aims to bring together researchers from various engineering disciplines as mechanical engineering, civil engineering, power plant engineering, automotive and transportation, aerospace, microelectronics and other branches, all faced with failure phenomena and their prevention, on order to exchange their experiences and to gain more comprehensive understanding.

The conference will comprise invited keynote lectures by outstanding international scientists, contributed oral presentations and posters.

Keynote Lectures

Real-Time Imaging of Crack Propagation at Grain Boundaries with Synchrotron Radiation

W. J. JONES, University of Michigan, Ann Arbor, MI, US

Mesoscopic Simulation in Microstructure-Sensitive VHCF

D. L. MCDOWELL, Georgia Institute of Technology, Atlanta, GA, US

VHCF Measuring Techniques

S. STANZL-TSCHEGG, Universität für Bodenkultur Wien, AT

Review and New Analysis on Fatigue Crack Initiation Mechanisms of Interior Inclusion-induced Fracture of Metallic Materials in Very High Cycle Regime

T. SAKAI, Ritsumeikan University, Shiga, JP

Challenges for the Experimental Investigation of VHCF of Polymer Composites

M. SINAPIUS, Deutsches Zentrum für Luft- und Raumfahrt (DLR), Braunschweig, DE

VHCF and UHCF in Small Volumes and Metal Thin Films – Novel Experiments and Modeling

C. EBERL, Universität Karlsruhe (TH), DE

Approaches to Fatigue Life Assessment applied in the Very High Cycle Regime

B. PYTTEL, TU Darmstadt, DE; *T. BRUDER*, Fraunhofer-Institut für Betriebsfestigkeit und Systemzuverlässigkeit (LBF), Darmstadt, DE

How to deal with VHCF-Effects in Practical Applications

M. BACHER-HOECHST, *S. ISSLER*, Robert Bosch GmbH, Stuttgart, DE

Scientific Topics

The scientific topics will focus on

- all metallic materials (ferrous materials, non-ferrous materials as Al, Mg, Ti, Ni etc.)
- composites and
- advanced materials and MEMS

at material related number of cycles 10^7 to 10^{10} or higher.

A) Fundamentals, physics and mechanisms

A1 Mechanisms of crack initiation

A2 Nonpropagating cracks, growth of short and long cracks

B) Parameters

B1 Influence of microstructure and defects

B2 Influence of environment and temperature

B3 Notch and gradient effects

B4 Effect of mean and residual stresses

B5 Effect of variable amplitude loading

B6 Effect of surface treatment

C) Experimental methods

C1 Fatigue testing machines

C2 Instrumentation and experimental methods

D) Applications to components and structures

D1 Statistical and probabilistic modeling, development of life estimation models

D2 Assessment and modeling of fatigue damage and damage accumulation

D3 Actual structures and their components

D4 Case studies in industrial applications

E) Material databases and its application

E1 Material databases and application systems

Programme

The VHCF5 Tentative Programme including session arrangements and abstracts of the contributions is available on the conference website
www.vhcf5.de

Deadlines

March 31, 2011 (extended to April 10, 2011)

submission of full papers and registration including payment (conditional for publication of paper)

April 15, 2011

publication of final programme

June 01, 2011

submission of power point presentations

June 28 – 30, 2011

VHCF5, Berlin, Germany

Exhibition

In an accompanying exhibition of material testing systems and services as well as technical literature, the participants will have the opportunity to get acquainted with the most recent developments in materials testing. If you are interested in taking part in the VHCF5 Exhibition please contact us directly through vhcf5@dvm-berlin.de!

Language

The VHCF5 Language is English and will be required for all publications.

Proceedings

The Proceedings will be published and be available at the conference.

Conference Venue

Steigenberger Hotel Berlin

Los-Angeles-Platz 1, 10789 Berlin, Germany
Phone +49 30 21 27 -712, Fax +49 30 21 27 -797
convention@berlin.steigenberger.de, www.berlin.steigenberger.de

The conference will be held in Berlin, the old and new capital of Germany. Berlin is an exciting city with pulsating cultural life. Traditional and modern architecture both offer interesting contrasts and many different insights. Enjoy the diverse facets of this metropolis! Berlin can be reached easily by plane, train or by car. For further information please see: www.visitberlin.de

Information about public transport: www.bvg.de

Technical Visits

Friday, July 1, 2011, 08:30 – 11:30 (After-Conference-Day)

Berlin Gas Turbine Manufacturing and Test Center of Siemens Energy

The Berlin Gas Turbine Manufacturing and Test Center of Siemens Energy has a very long tradition in mechanical engineering. The plant was founded more than 100 years ago. Since then, different kinds of heavy machinery have been manufactured there. Turbomachinery, first steam turbines and currently gas turbines, have always been the main product line of the plant. The world's largest gas turbine ever built was shipped from the Berlin plant in April 2007. Visitors will get an introduction into gas turbine manufacture in general and advanced machining technologies in particular. An extended shop tour will complete the visit.

VHCF5 Fee for Technical Visit

EUR 10,00

Some more technical visits are being planned. Further details will be published.