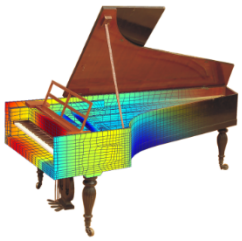
Analysis and Characterisation of Wooden Cultural Heritage by Scientific Engineering Methods



Halle (Germany) 28.-29.04.2016

Objectives

The use of wood has a long tradition and is closely linked to the cultural evolution of mankind. Widely available and easy to work, wood has been used not only as timber for construction but also as a raw material for carving and sculpting. Countless historic wooden buildings, vehicles and ships demonstrate the skills and virtuosity of past generations and cultures, just as great works of art such as paintings on wood, religious sculptures, musical instruments and furniture.

These objects are exposed to mechanical and climatic stress as well as biological deterioration, factors leading eventually to visible ageing of the material. String loads on stringed musical instruments, heating of indoor environments, climate change and moisture damage cause deformation and irreversible damage such as cracks. To preserve our cultural heritage for future generations various research activities have been conducted over the last decades, and the topic continues to be highly important. Properties of wood as a material and conservation issues of wooden object have been subject of numerous research projects, networks and conferences, activities which have considerably advanced our knowledge. Materials scientists, mechanical and acoustical engineers, conservators and museums cooperate in the interest of conserving our cultural heritage, to slow down degradation and to retain the material integrity of the objects so that they can continue to be presented to the public.

The symposium aims to favour the scientific exchange between researchers in the fields of the analysis of cultural heritage with engineering methods, and of the structural characterisation of objects such as musical instruments. Conservators are welcome to participate in the symposium, to join the discussion on tolerable climate fluctuations in museums, and to share their experiences of the impact of indoor climates on museum objects. We hope and expect that the discussion of analysis methods and numerical simulation results will lead to new perspectives and more general conclusions. Finally, the symposium will also be suitable as an introduction into the topic for early stage researchers, as the problems of the deterioration of wooden cultural heritage, for example due to climate variations, will remain important, and because the engineering methods currently being developed have important potential to contribute to their solution.

It is our pleasure to present to you a programme which we hope you will find rich, diverse and interesting, with the intention to offer you new insights into different engineering issues in relation with cultural heritage, combined with relevant case studies of objects and conservation problems.

Symposium Topics

multi-physical FE-modelling
wood material modelling
climate influences

musical instruments
panel paintings, sculptures, and others
conservation conditions

Target Audience

Physicists, engineers, conservators, curators and craftsmen dealing with wood or wooden historic objects. Early stage researchers are especially welcome.

Dates

April 28 to 29, 2016

Symposium Venue

Stiftung Händel-Haus
Große Nikolaistraße 5 · 06108 Halle (Saale) · Germany

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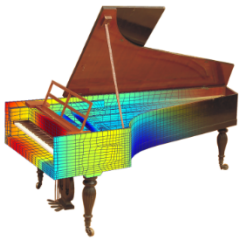

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Current Information and Programme
Flyer and a summary of important information including programme and lecturers are available on the following websites:
https://tu-dresden.de/bu/bauingenieurwesen/sdt/tagungen/2016
http://www.haendelhaus.de/de/forschung/Restaurierungsatelier/Fachtagungen/

The list of lectures and the final programme are attached at the end.

Registration
Early registration fees are applicable if payment is received not later than March 20, 2016.
Early: 65 € Late: 100 € On site: 130 €

The fee includes the conference proceedings, coffee breaks, concert ticket and conference dinner. Registration and transfer is possible until April 21, 2016. An acknowledgement of the registration will be sent. Registrations may be cancelled until April 21, 2016 with a full refund of the conference fee. After this date, a cancellation fee of 25 € will be charged. Registration after April 21 is only possible at venue by cash with an extra fee of 30 €.

For registration, please write an email at daniel.konopka@tu-dresden.de and finish it by transferring the fee within three work days after confirmation to the following bank account:

Technische Universität Dresden
Bank: Commerzbank
IBAN: DE52 8504 0000 0800 4004 00
SWIFT: COBADEFF850
Purpose: D-000089-001-1140901
WCE2016, surname, first name

Steuernummer (Germany): 203/149/02549
Tax-ID (foreign countries): DE 188 369 991

Attention! The number of participants is limited to 90 people!

Organisation
Univ.-Prof. Dr.-Ing. habil. Michael Kaliske and Dipl.-Ing. Daniel Konopka (TUD, Dresden, Germany),
Prof. Dr.-Ing. habil. Dr. h.c. Peter Niemz and M.Sc. Erik Bachtiar (ETH, Zürich, Switzerland),
Clemens Birnbaum and Stefan Ehricht (Stiftung Händel-Haus, Halle (Saale), Germany),
DPhil Dipl.-Chem. Kilian Anheuser (Musée d'Ethnographie de Genève MEG, Switzerland)

Contact
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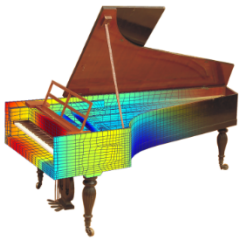

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Project

This symposium is part of the common project “Modelling and Characterization of the Structural Behaviour of Wooden Cultural Heritage under Hygro-mechanical Loading” of the Institute for Structural Analysis (TUD, Dresden, Germany) under Prof. Michael Kaliske and the Institute for Building Materials (ETH, Zürich, Switzerland) under Prof. Peter Niemz, together with Stiftung Händel-Haus (Halle (Saale), Germany) and Musée d'Ethnographie de Genève (MEG, Genève, Switzerland).

www.tu-dresden.de/isd
www.ifb.ethz.ch/
www.haendelhaus.de/en/
www.ville-ge.ch/meg/index_uk.php

gepris.dfg.de/gepris/projekt/240287377?language=en

General Information Halle (Saale)

Website of Halle (Saale)
www.halle.de/en/Home

Tourist Information
Marktplatz 13
06108 Halle (Saale)
phone: +49(0)345 – 122 99 84
email: touristinfo@stadtmarketing-halle.de
www.stadtmarketing-halle.de

Recommended Hotels

Dorint Hotel
Dorotheenstraße 12
06108 Halle (Saale)
phone: +49(0)345 – 29 23-0
email: info.halle-charlottenhof@dorint.com

TRYP by Wyndham Halle
Neustädter Passage 5
06122 Halle (Saale)
phone: +49(0)345 – 69310
email: info@tryphalle.com

Ankerhof Halle
Ankerstraße 2
06108 Halle (Saale)
phone: +49(0)345 – 232 32 00
email: reception@ankerhofhotel.de

Low capacities! Early booking is recommended.

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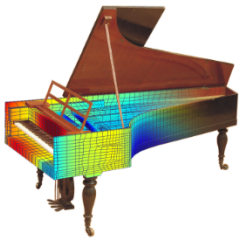

Attachment

Dresden, 08.04.2016

International Symposium 28.-29.04.2016, Halle/Saale

List of lectures

	Authors	Presenting Author	Title
1	Anheuser, K.	Anheuser, K.	*How is the Weather Today? Relative Humidity Variations in Museum Environments and their Impact on Collections*
2	Bachtiar, E.; Spielhofer, M.; Niemz, P.	Bachtiar, E.	*Hygric Properties of Solid, Glued Laminated and Varnished Walnut and Cherry*
3	Bratasz, Ł.	Bratasz, Ł.	*Assessing Environmentally Induced Risk for Wooden Works of Art*
4	Fioravanti, M.; Goli, G.; Carlson, B.	Fioravanti, M.	*The effects of Hygro-mechanical Variations on Conservation of Historical Wooden Musical Instruments*
5	Gamstedt, K.	Gamstedt, K.	*Development of a Numerical Model to Simulate the Effect of new Support Designs for a Wooden Shipwreck*
6	Gril, J.; Hunt, D.; Jullien, D.	Gril, J.	*Compression Set and Cupping of Painted Wooden Panels*
7	Kirsch, S.; Wagner, R.; Bär, F.P.; Fuchs, T.; Kretzer, C.; Raquet, M.; Scholz, G.; Wagner, S.; Wolters-Rosbach, M.	Kirsch, S.	*The MUSICES-Project: Towards a Standard for 3D-computed Tomography of Musical Instruments*
8	Konopka, D.; Kaliske, M.	Konopka, D.	*Hygro-mechanical Structural Analysis of Keyboard Instruments*
9	Le Conte, S.; Le Moyne, S.; Ollivier, F.; Vaidelich, S.	Le Conte, S.	*Bringing back Historical Instruments to Playing Conditions: Measuring Changes*
10	Luimes, R.A.; Suiker, A.S.J.; Jorissen, A.J.M.; Schellen, H.L.	Luimes, R.A	*Climate4Wood: Thermo-hygro-mechanical Coupled Modelling of Oak Wooden Museum Objects*
11	Froidevaux, J.; Navi, P.; Placencia Peña, M. I.; Saake, B.	Navi, P.	*Modelling the Properties of Old Wood and the Accelerated Thermo-hydrous Wood*
12	Pérez, M.	Pérez, M.	*A Frequency Domain Correlation Approach for the Assessment of Wooden Musical Instruments*
13	Uzielli L.; Togni, M.; Mazzanti, P.; Marcon, B.; Goli, G.; Dionisi-Vici P.; Cocchi, L.; Bonamini, G.	Uzielli, L.	*Measurement of Mechanical Properties of Wooden Supports of Original Panel Paintings*
14	Viala, R.; Cogan, S.; Placet, V.	Viala, R.	*Virtual Prototyping: A Potential Tool for Wooden Cultural Heritage Studies*
15	Zítek, P.; Vyhlídal, T.; Fišer, J.	Vyhlídal, T.	*A Practical Model-based Method to Assess the Risk Level of Wood Deterioration in Historic Interiors*

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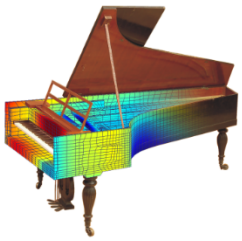

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Programme

Thursday April 28

09:00 - 10:00	Registration	
10:00	Opening	
10:30	I	***How is the Weather Today? Relative Humidity Variations in Museum Environments and their Impact on Collections*** Dr. Dipl.-Chem. Kilian Anheuser Musée d'ethnographie de Genève
11:00	II	***Assessing Environmentally Induced Risk for Wooden Works of Art*** Prof. Dr. habil. Łukasz Bratasz Institute for the Preservation of Cultural Heritage, Yale University
11:30	III	***A Practical Model-based Method to Assess the Risk Level of Wood Deterioration in Historic Interiors*** Prof. Dr. Tomáš Vyhlídal Department of Instrumentation and Control Engineering, Czech Technical University in Prague
12:00 - 14:00	Lunch Break	
14:00	IV	***Hygric Properties of Solid, Glued Laminated and Varnished Walnut and Cherry*** M.Sc. Erik Valentine Bachtiar Institute for Building Materials, Wood Physics, ETH Zurich
14:30	V	***Modelling the Properties of Old Wood and the Accelerated Thermo-hydrous Wood*** Prof. em. Dr. Parviz Navi Institute of Materials, École Polytechnique Fédérale de Lausanne (EPFL)
15:00	VI	***Climate4Wood: Thermo-hygro-mechanical Coupled Modelling of Oak Wooden Museum Objects*** M.Sc. Rianne A. Luimes Department of Built Environment, Technische Universiteit Eindhoven
15:30 - 16:00	Coffee Break	
16:00	VII	***Hygro-mechanical Structural Analysis of Keyboard Instruments*** Dipl.-Ing. Daniel Konopka Institute for Structural Analysis, Technische Universität Dresden
16:30	VIII	***A Frequency Domain Correlation Approach for the Assessment of Wooden Musical Instruments*** Prof. Dr. Marco A. Pérez Department of Industrial Engineering, IQS School of Engineering - Universitat Ramon Llull
17:00	IX	***Virtual Prototyping: A Potential Tool for Wooden Cultural Heritage Studies*** M.Sc. Romain Viala Department of Applied Mechanics, FEMTO-ST Institute, Besançon
19:00		***Concert at Händel-Haus*** Ekkehard Wölk Trio Berlin | Jazz
ca. 20:00		***Conference Dinner*** Hallesches Brauhaus · Große Nikolaistraße 2 · 06108 Halle (Saale)

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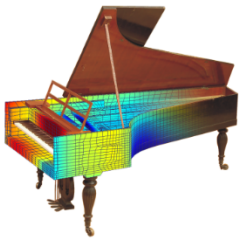

Friday April 29

09:00	X	***Development of a Numerical Model to Simulate the Effect of new Support Designs for a Wooden Shipwreck*** Prof. Dr. Kristofer Gamstedt Department of Engineering Sciences, Applied Sciences, Uppsala University
09:30	XI	***Measurement of Mechanical Properties of Wooden Supports of Original Panel Paintings*** Prof. em. Luca Uzielli Dept. GESAAF (Management of Agricultural, Food and Forestry Systems), University of Florence
10:00	XII	***Compression Set and Cupping of Painted Wooden Panels*** Dr. habil. Joseph Gril Laboratoire de Mécanique et Génie Civil (LMGC), CNRS, University of Montpellier
10:30 - 11:00	Coffee Break	
11:00	XIII	***Bringing back Historical Instruments to Playing Conditions: Measuring Changes*** Dr. Sandie Le Conte Cité de la musique, Paris
11:30	XIV	***The effects of Hygro-mechanical Variations on Conservation of Historical Wooden Musical Instruments*** Prof. Dr. Marco Fioravanti Dept. GESAAF (Management of Agricultural, Food and Forestry Systems), University of Florence
12:00	XV	***The MUSICES-Project: Towards a Standard for 3D-computed Tomography of Musical Instruments*** Dipl.-Rest. M.A. Sebastian Kirsch Germanisches Nationalmuseum, Nürnberg
12:30	Closing	