CompWood2023
Technical Programme

Last updated: 2026-11-14 01:06

Tuesday, 05/09/2023

Tue, 05/09/2023 18:00 - 20:00 Premises of the University

Pre-registration and Welcome Reception

Wednesday, 06/09/2023

Wed, 06/09/2023 08:15 - 09:15 — Premises of the University

Registration

Wed, 06/09/2023 09:15 - 09:30 — Room S89

Opening ceremony

Wed, 06/09/2023 09:30 - 10:00 — Room S89

Plenary Lecture - Prof. J. Eberhardsteiner

Advanced concepts for modelling failure and transport processes in wood and wood-based products

J. Füssl, M. Lukacevic, F. Brandstätter, C. Vida, S. Pech, M. Autengruber, ***J. Eberhardsteiner**

Wed, 06/09/2023 10:00 - 10:30 — Premises of the University

Coffee Break

Wed, 06/09/2023 10:30 - 12:15 — Room S89

Composites I

Load sharing in Timber-Concrete-Composite Ceilings – Form Experiment to FE-Analysis

***H. Kieslich,** K. Holschemacher, M. Kaliske

Shear connection of cross laminated timber wall elements using timber-concrete composites and carbon reinforced concrete

***B. Beckmann,** K. Farwig, M. Curbach

Braided veneer composites – investigation on the infiltration behaviour and the resulting mechanical properties:

***Y. Liu,** A. Liebsch, C. Siegel, A. Gelencsér, S. Kunze, R. Kupfer, C. Korn, M. Gude, A. Wagenführ

Multiscale Micromechanics Stiffness Modeling of Plant Fiber-Reinforced Composites

***M. Königsberger,** M. Lukacevic, J. Füssl

Numerical Modelling of the In-plane Stiffness and Connection Behaviour of Composite Timber-glass Wall Elements

***T. Engelen,** D. Byloos, B. Vandoren

Wed, 06/09/2023 10:30 - 12:15 — Room S91

Fracture

Prediction of Moisture Gradients and Related Crack Depths in Wooden Cross Sections subjected to Indoor Climate Conditions using a Finite-Element-Based Simulation Approach

***F. Brandstätter,** M. Autengruber, M. Lukacevic, J. Füssl

Phase field method-based modeling of fracture in wood

***S. Pech,** M. Lukacevic, J. Füssl

A brief overview on the development of research in the area of physical mechanical properties from solid wood and wood based materials

***P. Niemz**

An anisotropic eigenfracture approach accounting for mixed mode fracture in wood structures within the Representative Crack Element framework

***M. May,** D. Konopka, M. Kaliske

Wed, 06/09/2023 12:15 - 13:45 — Premises of the University

Lunch Time

Wed, 06/09/2023 13:45 - 15:15 — Room S89

Tomography I

The TreeTrace Douglas database: quality assessment and traceability of Douglas fir

F. Longuetaud, G. Pot, F. Mothe, A. Barthelemy, R. Decelle, F. Delconte, X. Ge, G. Guillaume, T. Mancini, T. Ravoajanahary, J. Butaud, R. Collet, I. Debled-Rennesson, B. Marcon, P. Ngo, B. Roux, ***J. Viguier**

Image-based Modelling of Wooden Structures for Structural Computation

***F. Spahn,** K. Moreno Gata, M. Trautz, S. Klinkel

3D fibre orientation reconstruction around a knot in Douglas fir

***H. Penvern,** L. Demoulin, G. Pot, J. Viguier , R. Collet, B. Roux, A. Olsson, M. Hu

Developing an orthotropic linear-elastic model using the FE method and tomography

***T. Chakkour**

Wed, 06/09/2023 13:45 - 15:15 Room S91

System Safety and Optimisation

A Finite Element Approach to Uncertainty Quantification in the Structural Performance of Cross Laminated Timber

***F. O'Donnell,** S. Arwade

Analysis of radial stress concentrations in curved glulam beams using Monte Carlo Simulations

***T. Yu,** F. Seeber, A. Khaloian, J. van de Kuilen

Multiscale Optimization with Orthotropic Material

***D. Masarczyk,** D. Kuhl

Resampling from Polymorphic Uncertain Results in Numerical Timber Simulations

***F. Schietzold,** W. Graf, M. Kaliske

Wed, 06/09/2023 15:15 - 15:45 Premises of the University

Coffee Break

Wed, 06/09/2023 15:45 - 17:30 Room S89

Connections

Numerical Analyses of Timber Beams with Perpendicular-to-grain Reinforcement at the Support

***E. Serrano**

Finite-Element Modelling of the Nail-Driving Process into Spruce Wood

***D. Rahmi,** R. Fleischhauer, M. Kaliske

Finite Element Modelling of Steel-Wood Fastener Connection in Product Development

***F. Ding**

Numerical Modelling of the Load-Deformation Behaviour of Connections With Inclined Self-Tapping Screws

***D. Caprio,** R. Jockwer

Push-out Testing of Screws for Timber-Concrete Composites: Evaluating Experimental Performance

***S. Yanez,** E. Perez, J. Pina

Wed, 06/09/2023 15:45 - 17:30 Room S91

Cross-Laminated Timber

Numerical and Experimental Evaluation of the Structural Performance of Cross Laminated Timber with Air Gaps

***R. Jockwer,** Y. Goto

Influence of Global Failure Criterion Definition on Bending Strength and Failure Mechanisms of Glued Laminated Timber Beams

***C. Vida,** M. Lukacevic, G. Hochreiner, J. Füssl

Numerical and Experimental Study of Flexural Properties of Cross-Laminated Timber (CLT) from Oil Palm Wood (Elaeis guineensis JACQ.)

***M. Hackel**

FE-modeling of long-term creep behavior in CLT-beams loaded in bending

***L. Kuai,** J. Vessby, S. Ormarsson

Computational Modelling of Cross-Laminated Timber Buildings and their Connections Subjected to Earthquake Loads

***E. Saavedra Flores,** R. Tapia, S. Torres-Olivares, Y. Delgado González, J. Pina, C. Guzmán, S. Yanez

Thursday, 07/09/2023

Thu, 07/09/2023 09:00 - 09:30 Room S89

Plenary Lecture - Prof. S. Ormarsson

Effective nonlinear FE-modelling of progressive failures of (3D) timber structures jointed with multiple-fastener connections

***S. Ormarsson,** L. Kuai

Thu, 07/09/2023 09:30 - 10:00 Room S89

Plenary Lecture - Prof. Andreja Kutnar

Enhancing Mechanical Properties of Wood by Thermo Hydro Mechanical Treatments

***A. Kutnar**

Thu, 07/09/2023 10:00 - 10:30 Premises of the University

Coffee Break

Thu, 07/09/2023 10:30 - 12:15 Room S89

Microscale and Homogenisation

Characterization of mechanical properties of five hot-pressed lignins extracted from different feedstocks by micromechanics-guided nanoindentation

***M. Schwaighofer,** L. Zelaya-Lainez, M. Königsberger, M. Lukacevic, S. Serna-Loaiza, M. Harasek, A. Friedl, O. Lahayne, V. Senk, J. Füssl

A multi-physics finite strain model for the coupled hygro-viscoelastic behavior of the wood cell wall

R. Lazo-Molina, ***C. Guzman**

Characterizing the Interaction between Paper Fibers Based on Experimental and Numerical Tests

***G. Kloppenburg,** C. Czibula, E. Walther, J. Neumann, U. Hirn, J. Simon

Rheological Study of Wood at Tissue Scale

***A. Ferrara,** F. Wittel

Prediction of the Thermo-Mechanical Properties of Radiata Pine Wood Through an Asymptotic Homogenisation Approach

C. Rojas Vega, E. Bosco, E. Saavedra Flores, C. Guzmán, S. Yanez, ***J. Pina**

Thu, 07/09/2023 10:30 - 12:15 Room S91

Application/Engineering

Discussion on the consistency of design concepts in EC5 - Data fitting or mechanical background

***G. Hochreiner**

Modelling Failure of Timber Frame Walls Subjected to Combined Shear and In-Plane Bending Loads

***D. Byloos,** B. Vandoren, T. Engelen

Substructure modelling of full size timber modules

***R. Maharjan,** L. Kuai, J. Vessby

Thu, 07/09/2023 12:15 - 13:45 Premises of the University

Lunch Break

Thu, 07/09/2023 13:45 - 15:15 Room S89

Tomography II

Evaluation of Knots and Fibre Orientation by Gradient Analysis in X-ray Computed Tomography Images of Wood

***J. Huber,** L. Olofsson

Application of Data from X-Ray CT Scanning and Optical Scanning to Adjust Model Parameters for Growth Surfaces Geometry and Fibre Directions in Norway Spruce

***M. Hu,** A. Olsson

X-ray Computed Tomography Aided Finite Element Modelling to Estimate the Hygroexpansion Coefficient of Norway Spruce Branch Wood

***S. Florisson,** H. Lycksam, F. Forsberg, L. Hansson, K. Gamstedt

X-ray computed tomography of paraffin phase change material embedded in hierarchical wood structures

***C. Kongvarhodom,** T. Pongsiri, P. Pakawanit, S. Ratanaphan

Thu, 07/09/2023 13:45 - 15:15 Room S91

Physical Properties

Towards a consistent benchmark dataset for the rheologic behavior of Norway spruce

***J. Maas,** F. Wittel

Advanced numerical method for the modelling of beech lamellas based on local material properties

***F. Seeber,** A. Khaloian-Sarnaghi, J. van de Kuilen

Experimental Testing and Numerical Evaluation of the Strain-softening Behavior of Birch Using a Cross-validation Calibration Approach

***J. Jonasson,** H. Danielsson, E. Serrano

Comparison of timber local moduli of elasticity under axial and bending loading, obtained by classical beam theory and finite element modelling

***G. Pot,** R. Duriot, S. Girardon, J. Viguier, L. Denaud

Thu, 07/09/2023 15:15 - 15:45 Premises of the University

Coffee Break

Thu, 07/09/2023 15:45 - 17:00 Room S89

Cultural Heritage

Hygro-Mechanical Long-term Analysis of Wood at Structural Scale

***J. Stöcklein,** M. Kaliske

Experimental-numerical study on the sensitivity of historical art objects to different museum climate conditions

***R. Luimes,** P. van Duin, J. Dorscheid, L. Vos, A. Suiker, E. Bosco, K. Keune

On the effect of moisture exchange in panel paintings

P. Foti, A. Califano, C. Bertolin, ***C. Gao,** F. Berto

Thu, 07/09/2023 15:45 - 17:00 Room S91

Densification

A Road Towards a Sustainable Thermo-Hygro-Mechanical Wood Densification Process

***M. Colla,** S. Ryelandt, T. Pardoen

Morphogenetic Vectors in the Densification of Cellular Scaffolds

A. Ferrara, S. Koch, ***F. Wittel**

Investigations on the thermo-mechanical behaviour of densified veneer wood for cryogenic applications

***J. Hartig,** M. Eichenauer, J. Wehsener, P. Haller

Thu, 07/09/2023 20:00 - 23:00 Ballhaus Watzke

Conference Dinner

Friday, 08/09/2023

Fri, 08/09/2023 09:00 - 10:00 Room S89

Composites II

Veneer Laminates for Tubular Structures in a Tripod – Testing for Design and Damage Modelling Approaches

E. Kunze, ***K. Tittmann,** Y. Mattern, M. Gude

Modeling and simulation of the bending of prestrained composite plates

K. Böhnlein, ***S. Neukamm,** O. Sander

Numerical Modeling of Plant Fiber-Reinforced Composites: Combining Main Failure Mechanisms for Accurate Macroscopic Strength Predictions

***V. Senk,** M. Königsberger, M. Lukacevic, J. Füssl

Fri, 08/09/2023 09:00 - 10:00 Room S91

Moisture Influence and Nonlinearity

Wood actuation: A smart way of utilizing dimensional instability

***M. Rüggeberg**

A Fiber Bundle Model for Wood Mechanosorption

***J. Amando de Barros,** F. Wittel

Constitutive Update to Predict the Non-Linear Behavior of Wood, Based on a Connection Between the Jacobian Explicit and the Deformation Gradient.

R. Quinteros-Mayne, ***I. de Arteaga Jorda,** J. Cabrero

Fri, 08/09/2023 10:00 - 10:30 Premises of the University

Coffee Break

Fri, 08/09/2023 10:30 - 11:00 Room S89

Plenary Lecture - Prof. C. Neinhuis

Beyond wood - structural and functional diversity in lignified tissues

***C. Neinhuis**

Fri, 08/09/2023 11:00 - 11:30 Room S89

Plenary Lecture - Prof. A. Suiker

Influence of morphology on effective hygro-elastic properties of oak wood

***A. Suiker,** A. Livani, A. Crivellaro, E. Bosco

Fri, 08/09/2023 11:30 - 11:45 Room S89

Closing