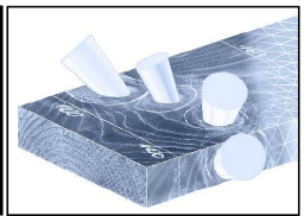
EUROPEAN MECHANICS SOCIETY



EUROMECH Colloquium 556

Theoretical, Numerical and Experimental Analyses in Wood Mechanics

27 May – 29 May 2015

PROGRAM

Wednesday May 27

09:00	Welcome		
09:10 - 09:50	Erik SERRANO (Lund University, Sweden), *Finite element analyses of fracture in wood and wood products*		
09:50 - 11:00	**Session I**		Fracture Simulation
	I.1	Dorn, M.	*A combined material model for plasticity and fracture for wood*
	I.2	Gebhardt, C.	*Fracture Simulation of Timber Structures using XFEM*
	I.3	Moutou Pitti, R.	*Fracture analysis in wood coupling viscoelastic behaviour and temperature effects by non-dependant integrals*
11:00 - 11:30	Break		
11:30 - 13:00	**Session II**		Experimental Investigation of Timber & Wood Products: Mechanical Properties
	II.1	Bogensperger, T.	*Concentrated load introduction in CLT elements perpendicular to plane*
	II.2	Haller, P.	*Experimental investigations on the behaviour of moulded wooden tubes made of beech under axial compression*
	II.3	Cavalli, A.	*Dynamic shear modulus of old timber members*
	II.4	Petersson, H.	*Influence of structural stability and material property variations on bending strength of solid timber*
13:00 - 14:30	Lunch		
14:30 - 15:10	**Session III**		Damage Detection
	III.1	Baensch, F.	*Real-time studies on the damage evolution in wood combining acoustic emission & X-ray tomographic microscopy*
	III.2	Miksic, A.	*Acoustic emission and fracture localisation in wood compression*
15:10 - 17:45	**Session IV**		Timber Simulation
	IV.1	Cabrero, J.M.	*Wood or timber? Considerations on the numerical modelling of wood and its fracture*
15:30 - 16:00	Break		
	IV.2	Briggert, A.	*Modelling 3D fibre orientation in timber on the basis of dot laser scanning and the tracheid effect*
	IV.3	Oppel, M.	*Numerical Constitutive Model for Timber, Depending on Gross Density*
	IV.4	Jenkel, C.	*Modelling of Material Inhomgeneities in Timber*
	IV.5	Füssl, J.	*A comprehensive mechanical modeling approach for the optimization of wood-based products*
	IV.6	Guindos, P.	*Application of the lattice approach to the macro-scale and comparison with continuum models*

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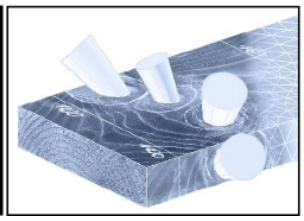

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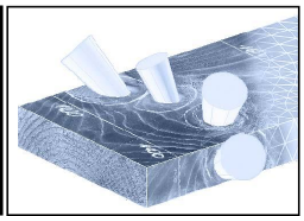
09:00 - 09:40	Ingo BURGERT (ETH Zurich, Switzerland), *Functional wood materials*		
09:40 - 10:45	**Session V**		Experimental Investigation of Timber & Wood Products: Influence of Climate
	V.1	Grolleau, V.	*High strain rate cryogenic compression of birch plywood*
	V.2	Kouko, J.	*Effect of heating on wet paper tensile stiffness and tension relaxation*
	V.3	Fioravanti, M.	*Residual viscous and MS deformation of an antique violin as a parameter to understand the mechanical effect of a concert*
10:45 - 11:15	Break		
11:15 - 13:00	**Session VI**		Hygro-Mechanics: Modelling and Simulation
	VI.1	Schulgasser, K.	*Modelling the transverse shrinkage of wood – micro to macro*
	VI.2	Derome, D.	*Adsorption and swelling of wood cell wall investigated with molecular dynamics simulations*
	VI.3	Montero, C.	*From wood hygromechanical interactions to timber structure longevity*
	VI.4	Ormarsson, S.	*Moisture-induced stresses in curved statically indeterminate timber structures*
	VI.5	Fortino, S.	*A multi-Fickian model to simulate the hygro-thermal behaviour of stress-laminated timber decks*
13:00 - 14:30	Lunch		
14:30 - 15:30	**Session VII**		Material Properties
	VII.1	Burgers, A.	*Influence of growth parameters on Mountain pine wood properties*
	VII.2	Bossu, J.	*Effect of interlocked grain on wood mechanical behaviour in Bagassa guianensis in French Guiana*
	VII.3	Farajzadeh Moshtaghin, A.	*Spatial variability in longitudinal elastic modulus of clear timber*
15:30 - 16:00	Break		
16:00 - 17:30	**Session VIII**		Applied Measurement Techniques
	VIII.1	Bertolini-Cestari, C.	*The role of terrestrial lidar for the mechanical evaluation of historic timber trusses*
	VIII.2	Sebera, V.	*Using DIC in measurement of strains induced in trees during bending*
	VIII.3	Gril, J.	*The Mona Lisa Project: an update on the progress of measurement and monitoring activities*
	VIII.4	Major, B.	*Glue laminated timber structure evaluation by acoustic tomography*
19:00	Dinner		



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9:00 - 10:30	**Session IX**		Wooden Products Simulation
	IX.1	Hall, C.	*New Elements for Modelling the Nonlinear Load-bearing Behaviour of Wood Shear Walls and Diaphragms*
	IX.2	Makhlouf, H.	*Virtual Test Procedure for Wood Furniture*
	IX.3	Franzoni, L.	*Advanced modelling of Cross Laminated Timber (CLT) panels in bending*
	IX.4	Ekevad, M.	*Finite Element Models for Stress-Laminated Solid Wood Decks*
10:30 - 11:00	Break		
11:00 - 11:40	Hans Joachim BLASS (KIT Karlsruhe, Germany), *Numerical and experimental analysis of glulam and crosslam members*		
11:40 - 12:20	**Session X**		Experimental Investigation of Timber & Wood Products: Joints
	X.1	Bader, T.K.	*Integrative research for an enhanced design of dowel connections*
	X.2	Mazzanti, P.	*An experimental study on wooden "buttons" for anchoring elastic crossbars on the back face of panel paintings, to characterise their mechanical behaviour*
12:20 - 13:00	**Session XI**		Applied Mechanics
	XI.1	Marcon, B.	*Methodology for the design of crossbeams and springs system for cupping control of wooden panel paintings*
	XI.2	Viala, R.	*Model-based effects screening of a violin including orthotropic material behaviors*
13:00 - 13:15	Closing		
13:15 - 14:30	Lunch (light)		