



International Symposium on Wood Sciences

OCTOBER 24-29, 2004, MONTPELLIER, FRANCE

SUNDAY 24 OCTOBER 2004	
17:00 – 19.00	Registration at Cirad + Poster display
MONDAY 25 OCTOBER 2004	
08.30 – 09.30	Registration + Poster display
09.30 – 09.45	Introduction + Welcome
09.45 – 10.00	Presentation of Cirad by IAWS fellow Dr. Sales C.
10.00 – 11.00	IAWS-Academy Lecture: GUITARD D.: Wood mechanics - From trees to timbers and wood products
11.00 – 11.30	Coffee
Session 1 PALAEOBOTANY	
11.30 – 12.00	EDWARDS DIANNE: Water conducting cells in early tracheophytes
12.00 - 12.20	PHILIPPE MARC, CANTRILL DAVID: Back to basics - reinvestigation of Gothan's holotypes with emphasis on <i>Xenoxylon</i> and mixed type of radial pitting
12.20 – 12.40	POOLE IMOGEN, VAN BERGEN PIM F., KOOL JOHAN, CANTRILL DAVID J., SCHOUTEN STEFAN: Can isotopic heterogeneity of fossil wood help determine palaeoclimate?
12.40 – 13.00	BAMFORD MARION K., WARD JOHN D.: Eocene fossil woods from the Blaubok Gravels, Bogenfels, Namibia
13.00 – 14.30	Lunch
Session 2 SYSTEMATIC AND ECOLOGICAL WOOD ANATOMY	
14.30 – 14.50	LENS FREDERIC, JANSEN STEVEN, SMETS ERIK: Overview of wood anatomical variation in Sapotaceae
14.50 – 15.10	TALON BRIGITTE, CARCAILLET CHRISTOPHER: Criteria for identification of European Boreo-Alpine Ericaceae
15.10 – 15.30	LENS FREDERIC, DRESSLER STEFAN, JANSEN STEVEN, VAN EVELGHEM LIESBETH, SMETS ERIK (PRESENTING AUTHOR): Wood anatomical variation of balsaminoids, with special attention to the position of

	Balsaminaceae (Ericales)
15.30 – 15.50	OSKOLSKI A.A.: Wood anatomy of Apiaceae and its phylogenetic implications
Session 3	FOREST PRODUCTS
14.30 – 14.50	BRÄNDSTRÖM, J., FERNANDO D., HAFRÉN J., DANIEL G.: Tracheid ultrastructure of Norway spruce (<i>Picea abies</i> L. Karst.) wood and its influence on mechanical pulp and final paper products
14.50 – 15.10	EL BAKALI IDRIS, GEORGE BEATRICE, MERLIN ANDRÉ, DEGLISE XAVIER: Durability of natural colour of different wood species under solar type exposure
15.10 – 15.30	KOCH GERALD: Application of scanning UV microspectrophotometry for the topochemical detection of lignin and phenolic extractives in wood fibre cell walls
15.30 – 15.50	RAMANANANTOANDRO TAHIANA, BACOU MARIE, ETERRADOSSI OLIVIER, LARRICQ PIERRE, KHAZAEIAN ABOLGHASEM: Application of laser and confocal optical profilometry for 3-D surface metrology on wood materials
15.50 – 16.20	Tea
Session 4	WOOD DEVELOPMENT AND ULTRASTRUCTURE
16.20 – 16.40	ALONI R., LANGHANS M., ALONI E., SCHWALM K., ULLRICH C.I.: Auxin production, its transport pathways and their role in wood formation
16.40 – 17.00	CHAFFEY NIGEL: Cytoskeleton, cambium, and communication: putting the vitae into lignum
17.00 – 17.20	KITIN PETER B., BEECKMAN HANS, FUJII TOMOYUKI, FUNADA RYO, ABE HISASHI: The xylem parenchyma with disjunctive cell walls - its occurrence and morphology revealed by SEM and confocal microscopy
17.20 – 17.40	FUNADA R., SHIBAGAKI M., MUTOH J., NAKABA S., KITIN P., ORIBE Y.: Seasonal changes in response of microtubules to low temperatures in conifers
Session 5	FOREST PRODUCTS
16.20 – 16.40	KLAASSEN R.K.W.M.: Cause and pattern of bacterial wood degradation
16.40 – 17.00	SCHIMLECK L.R., JONES P.D., DANIELS R.F., PETER G.F., EVANS R., CLARK A., STÜRZENBECHER R., MORA C.: Nondestructive estimation of wood properties of <i>Pinus taeda</i> radial wood strips by near infrared spectro
17.00 – 17.20	WIEMANN MICHAEL C., MILLER REGIS B., GREEN DAVID W.: Specific gravity as a predictor of mechanical properties
17.20 – 17.40	GARDINER BARRY, LEBAN JEAN-MICHEL, HUBERT JASON, DAQUITAINE RENAUD: Modelling the timber properties of <i>Sitka</i> spruce
17.40 – 19.00	POSTER SESSION + RECEPTION SPONSORED BY CIRAD

TUESDAY 26 OCTOBER 2004	
Session 6	XYLEM PHYSIOLOGY
09.00 – 09.20	COCHARD HERVÉ, MAYR STEFAN, COUTAND CATHERINE, JERONIMIDIS GEORGE: Xylem wall collapse and cavitation in <i>Pinus</i> spp.
09.20 – 09.40	DOMEC JEAN-CHRISTOPHE, PRUYN M.L., GARTNER B.L.: Axial and radial profiles in xylem conductivity, water storage and native embolism in young and old-growth ponderosa pine trees
09.40 – 10.00	MATON CLARISSE, GARTNER BARBARA L.: Longevity of the needle-to-stem xylem connections in conifers: patterns and potential causes
10.00 – 10.20	GARTNER BARBARA L., DOMEC JEAN-CHRISTOPHE, MEINZER FREDERICK C., WOODRUFF DAVID: Gradients of xylem water tension across Douglas-fir trunks: deducing patterns and causes
10.20 – 10.40	KERN KRISTINE A., EWERS FRANK W. [presenting author], TELEWSKI FRANK W., KÖHLER LOTHAR: Effect of mechanical perturbation on hydraulic conductivity, mechanical properties, and aboveground biomass of seven hybrid poplar clones
10.40 – 11.00	Coffee
Session 7	ARCHAEOLOGY
11.00 – 11.20	LAVIER CATHERINE: What the study of wood can reveal concerning anthropological activities: archaeo-dendrometrical approaches through selected examples
11.20 – 11.40	ITOH TAKAO: Database of forest trees and wooden remains excavated from historic sites in Japan
11.40 – 12.00	MERTZ MECHTILD, ITOH TAKAO: Wood identification of Japanese and Chinese Buddhist sculptures
12.00 – 12.20	ASENSI AMORÓS MARIA VICTORIA: Ancient Egyptian woods database: the importance of trade
12.20 – 12.40	CUFAR KATARINA, ZUPANCIC MARTIN, GRICAR JOZICA, VELUSCEK ANTON: Research potential of archaeological wood from the Ljubljansko barje (Slovenia)
12.40 – 13.00	GIACHI GIANNA, MACCHIONI NICOLA, PIZZO BENEDETTO, CAPRETTI CHIARA, FIORENTINO LUIGI, LAZZERI SIMONA, SANTONI ILARIA: A review of diagnostic investigations in archaeological waterlogged wood conservation
Session 8	FOREST PRODUCTS
11.00 – 11.20	SINGH ADYA, DAWSON BERNARD, SCHMITT UWE, KIM YOON SOO: The role of confocal microscopy in understanding wood-coating interaction
11.20 – 11.40	MACCHIONI N., PIZZO B.: Wooden foundations: anatomical, physical and chemical characterisation of the decay
11.40 – 12.00	KOSTIAINEN KATRI, KAAKINEN SEIJA, EK FREDRIK, VAPAAVUORI ELINA, SIGURDSSON BJARNI D., LINDER SUNE, KUBISKE MARK E., SOBER JAAK, KARNOSKY DAVID F., SARANPÄÄ PEKKA: Does climate

	change affect the wood structure and chemistry of Norway spruce (<i>Picea abies</i> (L.) Karst.) and trembling aspen (<i>Populus tremuloides</i> Michx.)?
12.00 – 12.20	STRAZE A., MERELA M., GORISEK Z., OVEN P.: Occurrence of discolouration of beechwood (<i>Fagus sylvatica</i> L.) during conventional drying
12.20 – 12.40	HOSSEINI SEYYED ZIAEDDIN: Preliminary study of biomass, fibre characteristics and chemical composition in six year old Brutian Pine (<i>Pinus brutia</i> Michx.)
13.00 – 14.30	Lunch
Session 9	WOOD DEVELOPMENT AND ULSTRATRUCTURE
14.30 – 14.50	ANGELES GUILLERMO, ZENDEJAS-LÓPEZ PATRICIA, ORTEGA-ESCALONA FERNANDO, MADERO-VEGA CAROLINA: Water storage capacity in stems of Urticaceae
14.50 – 15.10	ORIBE YUICHIRO, FUNADA RYO, KUBO TAKAFUMI: Cambial activity in locally heated stems of evergreen and deciduous conifers during winter cambial dormancy
15.10 – 15.30	KIM SOO YOON, LEE HO KWANG, SINGH ADYA, BEETS PETER: Ultrastructural characteristics of <i>Pinus radiata</i> affected by frost
15.30 – 15.50	OVEN P.: Formation of callus, new cambium and vascular tissue in wounded stems of Norway spruce
Session 10	BIOMECHANICS
14.30 – 14.50	BURGERT INGO, KECKES JOZEF, STANZL-TSCHEGG STEFANIE, FRATZL PETER: Tree biomechanics - Micromechanical investigations into the structure-function relationships of wood at the tissue and cell level
14.50 – 15.10	CLAIR BRUNO, GRIL JOSEPH, BABA KEI'ICHI, THIBAUT BERNARD, SUGIYAMA JUNJI: Growth stresses at the cell wall level in poplar tension wood and its consequences on anatomical observations
15.10 – 15.30	KUO-HUANG LING-LONG, HUANG YAN-SAN, CHEN SHIH-SHIH, HSIEH YI-IN: Growth strains and the related wood structure in the branches of <i>Trochodendron aralioides</i> - a vesselless dicotyledon
15.30 – 15.50	CHAPOTIN S.M., HOLBROOK N.M.: The anatomy, structure and biomechanical properties of baobab wood (<i>Adansonia</i> spp.)
15.50 – 16.20	Tea
Session 11	BIOMECHANICS
16.20 – 16.40	ROWE NICK, SPECK THOMAS: The biomechanical and evolutionary significance of the cambium: a major key innovation in land plant evolution
16.40 – 17.00	RUELLE JULIEN, BEAUCHENE JACQUES, THIBAUT ANNE, THIBAUT BERNARD: Some features of tension wood anatomy compared with normal wood for six tropical species
17.00 – 17.20	RINN FRANK: Wood anatomical basics of stress wave tomography of wood
17.20 – 17.40	THIBAUT BERNARD, RUELLE JULIEN, CLAIR BRUNO: Reaction wood:

	anatomy versus mechanical approach
Session 12	FOREST PRODUCTS
16.20 – 16.40	UGOLEV B.N., SANAIEV V.G.: Wood science development and university education in Russia
16.40 – 17.00	KORPACHEV V.P., GUDAIEV K.V., GUBIN I.V., JUROV E.N., MALININ L.I.: Forests, reservoirs and hydroelectric power stations
17.00 – 17.20	ROOHNIA MEHRAN: Variations in linear shrinkage of <i>Cupressus arizonica</i> wood from plantations in Karaj (Iran)
17.20 – 17.40	NOURBAKHS A., KOKTA B.V., JAHAN- LATIBARI A.: The effect of poplar wood fibre quality in thermoplastic composites
18.00	IAWS BUSINESS MEETING (IAWS fellows only)

WEDNESDAY 27 OCTOBER 2004

09.00 – 19.00	DAY TOUR Presentation of a Mediterranean scrubland forestry ecosystem Visit to the Pont du Gard (an antique Roman aqueduct) Visit to a Roman site Lunch Presentation of a pond humid ecosystem Visit to the medieval city of Aigues Mortes
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THURSDAY 28 OCTOBER 2004

Session 13	DENDROCHRONOLOGY
09.00 – 09.20	COURALET CAMILLE, SASS-KLAASSEN UTE, STERCK FRANK: Application of dendrochronology to sustainable forest management in the tropics: population dynamics of <i>Juniperus procera</i> in a dry highland forest of Ethiopia
09.20 – 09.40	AMANO E., ANGYALOSSY V.: The cambium and seasonal development of the xylem and the phloem in <i>Cordia trichotoma</i> (Boraginaceae)
09.40 – 10.00	KAGAWA AKIRA, SUGIMOTO ATSUKO, ABE HISASHI: How is temporal photosynthetic carbon isotope signature recorded into tree rings? A study with CO ₂ pulse-labeling
10.00 – 10.20	VERHEYDEN ANOUK, DE RIDDER FJO, SCHMITZ NELE, BEECKMAN HANS, KOEDAM NICO: High-resolution vessel density measurements and spectral analysis reveal link with climate in the mangrove <i>Rhizophora mucronata</i>
10.20 – 10.40	DEVALL MARGARET S.: Dendroecology of cypress (<i>Taxodium distichum</i>) and swamp tupelo (<i>Nyssa aquatica</i>) in a Louisiana wetland
10.40 – 11.10	Coffee
Session 14	FUNCTIONAL XYLEM ANATOMY

11.00 – 11.20	JANSEN STEVEN, CHOAT BRENDAN, FREDERIC LENS, DUTE ROLAND: The micromorphology of intervacular pits in angiosperms
11.20 – 11.40	CHOAT BRENDAN, JANSEN STEVEN, ZWIENIECKI MACIEJ A., HOLBROOK N. MICHELE: Changes in pit membrane porosity due to deflection and stretching: the role of vested pits
11.40 – 12.00	SANO YUZOU, OHTA TOMOHIRO: Structure of interfibre pit membranes and vessel to fibre pits, as observed by field-emission scanning electron microscopy
12.00 – 12.20	ROTH-NEBELSICK ANITA, KONRAD WILFRIED: Interfacial effects in xylem conduits and their significance for embolism formation and repair
12.20 – 12.40	BARIJ NADIA, STOKES ALEXIA, CERMAK JAN: Influence of xylem anatomy on water efficiency through stems: xylem structure in stems of <i>Quercus suber</i>
Session 15	BIOMECHANICS
11.00 – 11.20	KÖHLER LOTHAR, TELEWSKI FRANK W. [presenting author], EWERS FRANK W.: Thigmomorphogenesis: the role of lignin monomer content on mechanical properties of wood and stem allome
11.20 – 11.40	HAMILTON WAYNE L.: Wind velocity and direction history in eccentric growth of conifers at Port Angeles, Washington, USA
11.40 – 12.00	FOETZKI ANDREA, MARTIN JONSSON, VALERIE HERZIG, TOR LUNDSTRÖM, FRITZ SCHWEINGRUBER: Effects of a rockfall impact on wood anatomy and wood biomechanics of Norway spruce (<i>Picea abies</i> (L.) Karst.)
12.00 – 12.20	PERRÉ PATRICK, RÉMOND ROMAIN, PASSARD JOËLLE: Heat and mass transfer and creep mechanisms in wood as an engineering material: a comprehensive computational model able to link theory and practice
12.20 – 12.40	PERRÉ PATRICK: Homogenisation as a new approach to explain the anisotropy of wood shrinkage in the transverse plane: the cumulative effect of the ultrastructure and the cell morphology
13.00 – 14.30	Lunch
Session 16	SYSTEMATIC AND ECOLOGICAL WOOD ANATOMY
14.30 – 14.50	GASSON PETER, WHITE LYDIA: CITES listed woods: rising to the challenge of identifying them
14.50 – 15.10	MILLER REGIS B., WIEMANN MICHAEL: Separating the species of rosewood (<i>Dalbergia</i>): Is it possible?
15.10 – 15.30	SOFFIATTI P., ANGYALOSSY V., CHASE M.: Some wood anatomical characters in the framework of a molecular analysis in tribe Cereeae, Cactaceae
15.30 – 15.50	STEPANOVA ANNA V.: Wood anatomy of the rhizomes in <i>Potentilla</i> L. (Rosaceae)
15.50 – 16.20	Tea
Session 17	XYLEM PHYSIOLOGY

16.20 – 16.40	ZIMMERMANN ULRICH, SCHNEIDER HEIKE, WEGNER LARS H.: Water ascent in tall trees: Does evolution of land plants rely on a highly metastable state?
16.40 – 17.00	GAST U., LIU K., HAMPP R., MAGEL E.: Regulation of carbon transfer in the mistletoe-host (poplar) interface
17.00 – 17.20	UTSUMI Y., UMEBAYASHI T., KOGA S., INOUE S., SHIIBA Y.: Xylem water transport pathway in Japanese dicotyledonous trees
17.20 – 17.40	AMÉGLIO THIERRY, ALVES GEORGES, DECOURTEIX MÉLANIE, EWERS FRANK, COCHARD HERVÉ, JULIEN JEAN-LOUIS, PETEL GILLES, GUILLIOT AGNÈS, BONHOMME MARC, SAKR SOULAIMAN, BRUNEL NICOLE, RAGEAU RÉMY, LACOINTE ANDRÉ: Winter embolism and mechanisms of xylem hydraulic conductivity recovery in walnut
19.00	IAWA Business meeting
20.00	IAWA SOCIAL HOUR + CONFERENCE DINNER

FRIDAY 29 OCTOBER 2004	
Session 18	PALAEOBOTANY
09.00 – 09.20	RUDNER ZITA EDINA, SEPPÄLÄ MATTI: Forest fires in Finnish Lapland during the Holocene
09.20 – 09.40	SCHEEL-YBERT RITA, GONÇALVES THAÍS ALVES PEREIRA: Wood anatomy of Brazilian extra-Amazonian species, based on charcoal analysis. I. Anacardiaceae, Annonaceae, Apocynaceae, Aquifoliaceae, Araliaceae
09.40 – 10.00	SAKALA JAKUB, PRIVÉ-GILL CATHERINE: Botanical affinity of <i>Podocarpoxyton</i> Gothan from the Tertiary of Europe with particular reference to <i>P. helmstedtianum</i> Gottwald
10.00 – 10.20	WHEELER, E.A., WIEMANN M.C: Woods of the Miocene Bakate Formation, Fejej Plain, Ethiopia
10.20 – 10.40	DE FRANCESCHI DARIO: <i>Terminalioxyton</i> fossil woods from the Oligo-Miocene deposits of Baluchistan (Pakistan): palaeo-ecological implications
Session 19	WOOD DEVELOPMENT AND ULSTRATRUCTURE
09.00 – 09.20	LOUREIRO JOÃO, DOLEZEL JAROSLAV, SANTOS CONCEIÇÃO: Flow cytometric approaches to study woody plant genomics and cytomics
09.20 – 09.40	ONA TOSHIHIRO, OHSHIMA JYUNICHI, ADACHI KODAI, YOKOTA SHINSO, YOSHIZAWA NOBUO: In situ determination of cell morphology in trees by Fourier transform Raman spectroscopy
09.40 – 10.00	FRANKENSTEIN C., SCHMITT U.: Wound callus formation in poplar (<i>Populus tremula</i> L. x <i>Populus tremuloides</i> Michx.) a microscopic study
10.00 – 10.20	ROZENBERG PHILIPPE, POT DAVID, SANCHEZ LEOPOLDO, IVKOVIĆ MILOŠ, FRANC ALAIN: Heritability of wood microdensity as a description of the genetic control of tree plasticity in maritime pine
10.20 – 10.40	SANTOS CONCEIÇÃO, PINTO GLORIA, COSTA ARMANDO, LOUREIRO JOÃO, LOPES TINA: Somatic embryogenesis, acclimatization and

	genetic stability assessment of woody plants: case studies of cork oaks, elms and olive trees
10.40 – 11.10	Coffee
Session 20	Closing session
11.10 – 11.30	LEAL SOFIA, SOUSA VICELINA B., PEREIRA HELENA: Radial variation of wood cell dimensions in cork oak (<i>Quercus suber</i> L.) wood
11.30 – 11.50	DONALDSON LLOYD, XU PING: Microfibril orientation across the secondary cell wall of <i>Pinus radiata</i> tracheids
11.50 – 12.10	SIEMONSMA J.S., LEMMENS R.H.M.J.: Timbers of Tropical Africa
12.10 – 12.30	Closing ceremony
14.00	FAREWELL LUNCH IN A “MANADE” + VISIT AND SHOW AROUND REGIONAL CUSTOMS