Publications of tree-ecophysiology group

**Institute of Forest Botany, Dendrology and Geobiocenology, Faculty of Forestry and Wood Technology, Mendel University of Agriculture and Forestry, Zemedelská 3, CZ-61300 BRNO Czech Republic**.

#### Tel.+420-545-134-181, e-mail: cermak@mendelu.cz,

1. **TREE WATER RELATIONS, STRUCTURE AND GROWTH**

Totzke C.,Čermák J., Nadezhdina N., Tributsch H. **2015.** Electrochemical in-situ studies of solare mediated oxygen transport and turnover dynamics in a tree trunk of *Tilia cordata.* iForest – Biogeosciences and Forestry.

 (submitted)

Trcala M., Čermák J., Nadezhdina N. **2014**. A new heat balance equation for sap flow calculation during continuous linear heating in tree sapwood. (Agr. & For Meteor. - submitted)

Čermák J., Nadezhdina N., Staněk Z., Koller J., Simon J. 2014. Field applicable methods for whole tree root studies. (submitted: TREES)

Rybanský M., Čermák J., Ulrich R., Staněk Y. and Koller J. 2014. Differences in absorptive root areas between Scots pine and broadleaf tree species in relation to their mechanical stability and vehicle override ability.

 (submitted)

ČermákJ. 2016. Forest and water in the hydrological cycle of the landscape (in Czech). In: Proc.: Climatic Changes and We. (www.hnutizivot.cz). Plzeň, Jan.5.2016. 1-4pp. (334)

Čermák J. and Nadezhdina N. 2015. Forest and water in the period of jeopardizing by drought or overwatering (in Czech). In: Lesnická hydrologie – věda a praxe. 25p. Ostravice 21-23.2015. (abstract)

ČermákJ., NadezhdinaN., SimonJ., StaněkZ., Koller J. 2015. The assessment of tree anchoring in te ground as a basic parameter of their stability. – 1. Mechanical and physical methods – short communication (in Czech). Zprávy lesnického výzkumu, 60 (3): 233-237. (333)

Čermák J. and Nadezhdina N. **2015.** Diurnal and seasonal dynamics of sap flow and whole tree macrostructure (crowns with foliage and conducting plus absorptive roots) via field applicable instrumental methods. In: International Workshop on Sap Flow: Monitoring tree reaction to environment: tools and their application in forest ecology and urban forestry. The Society of Annas Tree School: June 17-19. 2015, Latvia. (abstract)

Trcala M., Čermák J., Nadezhdina N. **2015**. Water content measurement in tree wood using a continuous linear heating technique. Iternational Journal of Thermal Sciences. 88: 164-169. (332)

Gebauer R., Čermák J., Plichta R., Špindlerová Y., Urban J., Volařík D. and Ceulemans R. 2014. Within canopy variation in needle anatomy of sparse Scots pine forest. (submitted)

Čermák J., Simon J. and Nadezhdina N. **2014**. Measurements of the whole tree absorptive root area and spatial distribution of root water supply via sap flow patterns. In: Proc. Earth Science and Climate Change, Vol.5, Issue 6, pg. 49. <http://dx.doi.org/10.4172/2157/7617.S1.013>. (abstract)

ČermákJ., NadezhdinaN., SimonJ., Koller J., StaněkZ. 2014. Whole tree crown and root studies based on mobile instrumental methods. Conf. on 50th aniversary of British Arboristic Association. London 14-17.Sept. 2014.

 (abstract)

Čermák J., Nadezhdina N., Nadezhdin V., Staněk Z., Koller J., Trcala M., Amato M., Kantor P. **2014**. Asorptive root area and stem resistivity in whole trees of contrasting structure and size – methodical improvement. Plant and Soil, DOI 10.1007/s11104-014-2126-5 (331)

Čermák J., Nadezhdina N., Trcala M., Simon J. **2014**. Open-field applicable instrumental methods for structural and functinal assessment of whole trees and stands. iForest – Biogeosciences and Forestry, DOI: 10.3832/ifor1116-008., SISEV <http://www.sisev.it/iforest/>, e1-e53. (330)

Urban ., Čermák J., Ceulemans R. **2014.** Above and below-ground biomass, surface and volume, and stored water in mature Scots pine stand. Eur. J. For. Res. DOI 10.1007/s10342-014-0833-3. (329)

Nadezhdina N., Urban J., Čermák J., Nadezhdin V. and Kantor P. **2014**. Comparative study of long-term water uptake of Norway spruce and Douglas-fir in Moravian upland. J.Hydrol.Hydrotech., 62 (1): 1-6. (328)

Trcala M. and Čermák J. **2014**. Nonlinear finite element analysis of thermal inertia in heat-balance sap flow measurement. International Journal of Thermal Sciences. 76: 200-207. (327)

Nadezhda Nadezhdina, Teresa S. David, Jorge S. David, Valeriy Nadezhdin, Jan Cermak, Roman Gebauer, and Alexia Stokes, Čermák J., Nadezhdina N., Simon J., Staněk Z. and Koller J. **2013**.Whole tree and stand root systems analyzed by different instrumental methods. Jahrestagung der Osterreichischen Gessellschaft fur Wurzelforschung (ASRR) Workshop: „Imaging, measuring and analysing root systems – Methods and Models“, Nationalpark Neusiedler See – Seewinkel Hausveise, 7142 Illmitz, Burgenland, Austria, 16-17.Sept.2013.

 (poster 36)

Borja I., Světlík J., Nadezhdin V., Čermák J., Rosner S., Nadezhdina N. **2013**. Sap flow dynamics as a diagnostic tool in Norway spruce. In: K.Steppe (ed.): 9th International Workshop on Sap Flow, 4-7 June 2013, Ghent, Belgium. (poster 35)

Nadezhdina N. **2013**.Heat field deformation sensors for sap flow measurements in small stems. In: K.Steppe (ed.): 9th International Workshop on Sap Flow, 4-7 June 2013, Ghent, Belgium. (poster 34)

Trcala M. and Čermák J. **2013**. Thermal inertia of thermodynamic method used to measure sap flow by volume heating. In: K.Steppe (ed.): 9th Internat. Workshop on Sap Flow, 4-7 June 2013, Ghent, Belgium. (poster 33)

David T.S., Pinto C.A., Nadezhdina N., Kurz-Besson C., Henriques M.O., Quilho T., Cermak J., Chaves M.M., Perreira J.S., David J.S. **2013**. Root functioning, tree water use and hydraulic redistribution in *Quercus suber* trees: A modeling approach based on root sap flow. Forest Ecology and Management 307:136-146. (326)

Světlík J., Borja I., Rosner S., Čermák J., Nadezhdin V., and Nadezhdina N. **2013**. Differential translucence method as a supplement to sap flow measurement in Norway spruce with symptoms of top dieback. 9th International Workshop on Sap Flow, 4-7 June 2013, Ghent, Belgium. Acta Horticulturae,991:285-292. (325)

Hanssens J., Swaef T.De., Nadezhdina N. and Steppe K. **2013**. Measurement of sap flow dynamics through the tomato peduncle using a non-invasive sensor based on the heat field deformation method. In: K.Steppe (ed.): 9th International Workshop on Sap Flow, 4-7 June 2013, Ghent, Belgium. Acta Horticulturae, 991: 409-416. (324)

Plichta R., Nadezhdina N., Urban J. and Gebauer R. **2013**. Sap flow dynamics of Quercus pubescens and its hemiparasite Loranthus europaeus. In: K.Steppe (ed.): 9th International Workshop on Sap Flow, 4-7 June 2013, Ghent, Belgium. Acta Horticulturae, 991: 253-260. (323)

Nadezhdina N., David T.S., David J.S., Nadezhdin V. and Pinto C.A. **2013**. Mapping the water pathways in stem xylem by sap flow measurements during branch severing experiments. K.Steppe (ed.): 9th International Workshop on Sap Flow, 4-7 June 2013, Ghent, Belgium. Acta Horticulturae, 991: 223-230. (322)

Čermák J. Cudlín P., Gebauer R., Borja I., Martinková M., Staněk Z., Koller J., Neruda J. and Nadezhdina N. **2013**. Potential and effective absorptive root surface areas in large Norway spruce trees: testing the common direct and indirect earth impedance method. Plant and Soil, DOI 10.1007/s11104-013-1740-y. (321).

Čermák J., Simon J., Káňová H. and Tichá S. **2013**. Absorptive root areas of large pedunculate oak trees differing in health status along a road in South Bohemia. Urban Forestry & Urban Greening 12: 238-245. (320)

Urban, J., Holušová, K., Menšík, L., Čermák, J., Kantor, P. **2013.**Tree allometry of Douglas fir and Norway spruce on a nutrient-poor and a nutrient-rich site. Trees. 27:97-110. (319)

Nadezhdina N., Nadezhdin V., Gebauer R., Cermak J., David T.S., David J.S., Jimenez M.S., Morales D. **2012.** Proc. of the 8th International Workshop on Sap Flow Voltera, Italy, 8-12 May 2011. [Redistribution of water within the aboveground part of trees](http://www.scopus.com/record/display.url?eid=2-s2.0-84863651619&origin=resultslist&sort=plfo-f&cite=2-s2.0-84863651619&src=s&imp=t&sid=8F4813C6D08AF396723930223B6B5068.aXczxbyuHHiXgaIW6Ho7g%3a240&sot=cite&sdt=cite&sl=0) Acta Horticulturae, 951 , pp. 241-250 (318)

Trcala M., and Čermák J. **2012**. Sap flow and heat conductivity measurement and their interaction. Proc. of the 8th International Workshop on Sap Flow Voltera, Italy, 8-12 May 2011. Acta Horticulturae 951:95-100. (317)

Mazal P., Nohal L., Černý M., Čermák J. **2012**. Application of acoustic emission method during field measurements of sap flow in trees. Proc. of the 8th International Workshop on Sap Flow Voltera, Italy, 8-12 May 2011. Acta Horticulturae 951:95-100. (316)

Nadezhdina N., Nadezhdin V., Gebauer R. and Čermák J. **2012**. Redistribution of water within the aboveground part of trees. Proc. of the 8th International Workshop on Sap Flow Voltera, Italy, 8-12 May 2011. Acta Horticulturae 951:95-100. (315)

Čermák J. and Nadezhdina N., **2012**. Sap flow technology used in a non-traditional way including relations to tree structure. Proc. of the 8th International Workshop on Sap Flow Voltera, Italy, 8-12 May 2011, Acta Horticulturae 951:95-100. (314)

Nadezhdina N. **2012**. A simplified equation for sap flow calculation based on the heat field deformation (HFD) measuremants. Proc. of the 8th International Workshop on Sap Flow Voltera, Italy, 8-12 May 2011. Acta Horticulturae 951:95-100. (313)

Trcala M. and Čermák J. **2012.** Improvement of the trunk heat balance method including measurements of zero and reverse sap flows. Agricultural and Forest Meteorology, 166-167: 120-126 (312)

Haberle K-H., Weight R., Nikolova P., Reiter I.M., Cermak J., Wieser G., Blaschke H., Rotzer T., Pretzsch H., Matyssek R. **2012**. Case study „Kranzberg Forst“: growth and defence in European beech (*Fagus sylvatica* L.,) and Norway spruce (*Picea abies* (L.) Karst.). In: Matyssek R. (ed.): Ecological Studies, Chapter 11, 243-271 pp. Springer. (311)

Čermák J., Nadezhdina N., Simon J. **2012**. Open field applicable instrumental methods for whole tree and stand ecophysiology studies (in Czech). In Proc.:Rozvoj lesnické typologie a její užití v lesnické praxi. Konf. České lesnické společnosti a Ústavu pro hospodářskou úpravu lesů,Těrchov u Blanska, 1-12.září 2012. 13-22 pp. (310)

Urban J., Gebauer R., Nedezhdina N. and Čermák J. **2012**. Transpiration and stomatal conductance of mistletoe (*Loranthus europaeus*) and its host plant, downy oak (*Quercus pubescens*). Biologia 67(5): 917-926. DOI: 10.2478/s1178-012-0080-3. (309)

Nadezhdina N., Prax A., Čermák J., Nadezhdin V., Ulrich R., Neruda J., Schlaghamersky A. **2012**. Spruce roots under heavy machinery loading in two different soil types. Forest Ecology and Management, 282: 46-52. (308)

David T.S ., David J.S., Pinto C.A., Čermák J., Nadezhdin V., Nadezhdina N. **2012.** Hydraulic connectivity from roots to branches depicted through sap flow: analysis on a *Quercus suber* tree. Functional Plant Biology, 39: 103-115. (307)

Nadezhdina N., David T.S ., David J.S., Nadezhdin V., Čermák J., Gebauer R., and Stokes A. **2012**. Root structure: In Situ Studies Through Sap low Research. In: Manusco S.(ed.): Measuring Roots, an updated approach (Chapter 13: 247-266 pp.). Springer,Heidelberg,Dordrecht,London,N.York.382p. e-ISBN978-3-642-22067-8. (206)

Nadezhdina N., David T.S ., David J.S., Nadezhdin V., Čermák J., Gebauer R., Ferreira M.I., Conceicao N., Dohnal M., Tesar M., Gartner K. and Ceulemans R. **2012**. Root function: In Situ Studies Through Sap low Research. (Chapter 14: 267-290 pp.). In: Manusco S. (ed.): Measuring Roots, an updated approach. Springer Heidelberg, Dordrecht, London, N.York. 382p. e-ISBN 978-3-642-22067-8. (305)

Šrámek M. and Čermák J. **2012**. The vertical leaf distribution of *Ulmus laevis* Pall. Trees DOI 10.1007/s00468-012-0747/y: Jul.2012. 26: 1781-1792. (304)

Honzová M. and Čermák J. **2012**. Calculation of the size of the surface area of deciduous trees and their potential for eventual use in a forensic-expert practice. ExFoS - Expert Forensic Science, XXI.International Scientific Conference on Forensic Engineering. 20-21.01.2012. 1-11pp. (303)

Gloser V., Nadezhdina N., Zanne A. and Čermák J. **2011**. Degree of integration of xylem in trees. Available methods, their application and interpretation of results. (submitted)

Kazda M., Nadezhdina N., Čermák J., Maniero R. and Schmid I. **2011**. Spatial and species-related patterns of tree root distribution and interactions with soil water. (submitted)

Alexandr P. & Čermák J. **2011***.* Application of the method “Contact Flora Assessment, CFA“ approach, on the examples of conclusions of forensic expert judgements focused on national park and protected regions of Sumava mountains (in Czech). Proceedings of the XX. .International Scientific Conference on Forensic Engineering, ÚSI VUT v Brně, AZO, o. s., EVU-NS v ČR, o. s., Brno 21-22. 1. 2011, 1-11pp., ISBN 978-80-214-4238-2, 195-205pp. (302)

Čermák J., Nadezhdina N. and Grace J. **2011**. Instrumental estimates of whole tree root distribution in Scots pine trees at the forest edge in Lapland. John’s Grace Aniversary Meeting, Bologna, Italy. (poster)

BarijN., Čermák J. and Stokes A. **2011**. Azimuthal variations in xylem structure and water relations in cork oak (*Quercus suber* L). IAWA Journal, Vol.32(1): 25-40. (301)

Čermák J. and Nadezhdina N. **2011**. Instrumental approaches for studying tree water relations along gradients of tree size and forest age. Chapter 15 (385-426pp.) in: Meinzer F.C., Dawson T. and Lachenbruch B. (eds.): Size- and Age-Related Changes in Tree Structure and Function. Springer , Dordrecht, Heidelberg, London, New York. e-ISBN 978-94-007-1242-3. (300)

Čermák J. and Nadezhdina N. **2011**. Field studies of whole-tree leaf and roots distribution and water relations in several European forests. Chapter 4 in: Bredemeier M., Cohen S., Godbold D.L., Lode E., Pichler V., Schleppi P. (eds.) Forest Management and the Water Cycle. Ecological studies, 2011, Vol.212, Part 1, e-ISBN 978-90-481-9834\_4. (299)

Čermák J. **2011**. Functional diagnosis of trees (in Czech). 105-115pp. In: Alexandr P. Basics of Forensic Ecotechnique: Forest and Trees. Textbook for the Institute of Forensic Egineering. Academic Publ. Cerm, s.r.o. Brno, 168p. (textbook)

Pokorný J., Brom J., Čermák J., Hesslerová P., Huryna H., Naděždina N., Rejšková A. **2010**. Solar energy dissipation and temperature control by water and plants. International J. on Water, Vol.5(4): 311-336. (298)

Čermák J. and Nadezhdina N. **2010**. Functional parameters of trees and stands as related to their stability under changes of growth conditions. Workshop on Rotation Periods (in forestry), p.53. Humpolec 11.Nov.2010. ISBN (9780-02-02269-5). (abstract)

Čermák J. and Nadezhdina N. **2010**. Dendronics in forestry: Non-invasive instrumental measurements of root systems in small and adult trees. In: Proc. Fifth Internnational Symposium on Physiological Processes in Roots of Woody Plants. University of Victoria, Victoria, BC, Canada, August 8-12, 2010. (poster)

Kučerová A., Čermák J., Nadezhdina N. and Pokorný J. **2010**. Transpiration of *Pinus rotundata* on a wooded peat bog in Central Europe. Trees 24: 919-930. (DOI 10.1007/s00468-010-0463-4). (297)

Nadezhdina N., David T.S., David J.S., Ferreira M.I., Dohnal M., Tesar M., Gartner K., Leitgeb E., Nadezhdin V., Čermák J., Jimenez M.S. and Morales M. **2010**. Trees never rest: the multiple faces of hydraulic redistribution. Ecohydrology 3: 431-444. (DOI: 10.1002/eco.148) (296)

Alexandr P., Čermák J., Nadezhdina N. **2010**. Some possibilities of functional diagnostics in the juridically expert practice (in Czech). Forensic Engineering (Soudní inženýrství). 19 (5): 254-261. (295)

Alexandr P., Čermák J., Fér F., Matějíček J., Rebrošová K., Staněk J., Soukup M. **2010**. Forensic ecotechnics – forest and woody species (in Czech). Acad.Publ., CERM, 2010. 626p. (ISBN 978-80-7204-681-2). (294)

Butler A.J., Barbier N., Cermák J., Koller J., Thornily C., McEvoy C., Nicoll B., Perks M.P., Grace J. and Meir P. **2010**. Estimates and relations between aboveground and belowground resource exchange surface areas in a Sitka spruce managed forest. Tree Physiology, 30: 705-714. (293)

Bequet R., Čermák J., Nadezhdina N., De Canniere Ch. and Ceulemans R. **2010**. Tree water dynamics assessed through sap flow measurements. Biologie Plantarum 54(2): 366-368. (292)

Nadezhdina N. **2009.** Integration of water transport pathways in a maple tree: responses of sap flow to branch severing. Ann.For.Sci.67:107-(DOI: 10.1051/forest/2009092).INRA,EDP Sciences 2009,www.afs-journal.org.

 (291)

Čermák J. and Nadezhdina N. **2009**. Importance of field eco-physiological studies of tree water relations for hydrological purposes. In: International hydrological conference BioHydrology, 21-24.09.2009, Bratislava.

 (abstract)

Čermák J. and Nadezhdina N. **2009**. Changes in sapwood-related root distribution in trees of different size and their relations to up-scaling and soil water supply in contrasting species. In: Proc. Water Issues in Dryland Forestry. Cost Action FP0601, Forest Management and the Water Cycle (FORMAN), Ben-Gurion Univ. Sede Boquer Campus, Israel 10-12. Nov. 2009. (poster)

Urban J., Čermák J., Nadezhdina N., Kantor P. **2009**. Growth and transpiration of the Norway spruce and Douglas-fir at two contrasting sites. In: Proc. Water Issues in Dryland Forestry. Cost Action FP0601, Forest Management and the Water Cycle (FORMAN), Ben-Gurion Univ. Sede Boquer Campus, Israel 10-12. Nov. 2009. (poster)

NadezhdinaN., Steppe K., De Pauw D.J.W., Bequet R., Cermák J., Ceulemans R. **2009**. Stem-mediated hydraulic redistribution in large roots on opposing sides of a Douglas-fir tree following localised irrigation. New Phytologist 184: 932-943. (290)

De Lorenzi F., Nadezhdina N., Cermák J., Nadezhdin V., Pitacco A. **2009**. Sap flow in a mature olive tree: dynamics and quantification in trunk and branches. 7th Internatioal Workshop on Sap Flow, Seville (Spain) 21-24 October 2008. Acta Horticulturae (ISHS) 846: 315-322. (289)

Čermák J., Nadezhdina N. **2009**. Application of sap flow technique for characterizing the whole tree architecture, especially root distribution. 7th Internatioal Workshop on Sap Flow, Seville (Spain) 21-24 October 2008. Acta Horticulturae (ISHS) 846: 219-228. (288)

Steppe K., Saveyn A., Tahon P., Nadezhdina N., Čermák J., Lemeur R. **2009**. Radial sap flux profiles and beyond: an easy software analysis tool. 7th International Workshop on Sap Flow, Seville (Spain) 21-24 Oct. 2008. Acta Horticulturae (ISHS) 846: 85-92. (287)

Nadezhdina N. **2009**. Additional information derived from detail analysis of primary temperature data measured with the HFD-method. 7th Internatioal Workshop on Sap Flow, Seville (Spain) 21-24 Oct. 2008. Acta Horticulturae (ISHS) 846: 77-84. (286)

Nadezhdina N. **2009.** Integration of water transport pathways in a maple tree: responses of sap flow to branch severing. Ann.For.Sci.67:107-(DOI: 10.1051/forest/2009092).INRA,EDP Sciences 2009,www.afs-journal.org.

 (285)

Čermák J. and Nadezhdina N. **2009**. Absorbing roots and leaves distribution in studies based on whole tree approach in large pines and oaks. Internat. Symp. “RootRAP”, 2-4. Sept.2009, Vienna, Austria. p.81. (poster)

Gartner K., Leitgeb E., NadezhdinaN., EnglischM. and Čermák J. **2009.** Sap flow of birch and Norway spruce during the European hot and dry summer 2003. Forest Ecology and Management. 258: 590-599. (284)

Van der Zande, Mereu S., Nadezhdina N., Čermák J., Muys B., Coppin P., Manes F. **2009**. 3D upscaling of transpiration from leaf to tree using ground based LIDAR: Application on a Mediterraen Holm oak (*Quercus ilex* L.) tree. Agricultural and Forest Meteorology 149 (10): 1573-1583. (283)

Neruda J., Ulrich R., Nadezhdina N., Čermák J. **2009.** Unfavorable impacts of forwarder technology on tree root systems along skidding trails and possibilities of their prevention. In: Proc. FORMEC’09, June 21-24, Kostelec n.C.l., / Prague, Czech Republic, 1-5pp. (282)

Čermák J. and Prax A. **2009**. Transpiration and soil water supply in floodplain forests. Ekologia Bratislava, 28(3): 248-254. (281)

Urban J., Tatarinov F., Nadezhdina N., Cermák J., Ceulemans R. **2009**. Crown structure and leaf area of the understorey species Prunus serotina. Trees, Structure and Function 23: 391–399. (280)

Cermák J., Ulrich R., Culek I., Cermák M. **2008**. Visualization of root systems by the supersonic air stream. In : Neruda J. (ed.): Determination of damage to soil and root system of forest trees by the operation of logging machines. Mendel University of Agriculture and Forestry Publishing House, Brno 2008, 89-95pp. (279)

Nadezhdina N., Čermák J., Nadezhdin V., Gašpárek J. **2008**. Responses of sap flow in roots and tree stems. In: Neruda J. (ed.): Determination of damage to soil and root system of forest trees by the operation of logging machines. Mendel University of Agriculture and Forestry Publishing House, Brno 2008, 106-116pp (278).

Čermák J. **2008**. Tree eco-physiology: investigations into tree water relations, structure and growth. In: Proc. XII Seminar on Trees, Roots, Fungi, Soil. Below-ground ecosystem & implications for tree health. 32-42pp. Cardiff National Museum, Cathays Park, Cardiff, 13.Nov. 2008. (277)

Cermák J., Nadezhdina N., Prax A. **2008**. Tree roots and constructions (in Czech), 137-145p. In: Smýkal F. (ed.), Èermák J., Hora D., Kincl J., Nadezhdina N., Prax A.:Arboristics IV. High and Medium leve Horticulture school, Mìlník, 180 p. (textbook)

Sir M., Cermák J., Nadezhdina N., Prazak J. and Tesar M. **2008**. Measuring and modelling forest transpiration. XXIVth Conference of the Danubian Countries, IOP Conf. Series: Earth and Environmental Science 4: 1-5. doi: 10.1088/1755-1307/4/1/01250. (276)

Cermák J., Nadezhdina N., Prax A., Kucera J., Nadezhdin V. **2008**. Lack and surplus of soil water in floodplain forests and its impact on physiological processes and tree survival. In: Eurosoil 2008, Forest Management and Soils. Technical University Vienna (Austria), 25-29. August 2008. (textbook)

Prax A., Richter W., Cermák J., Hybler V. **2008**. The hydrological and moisture regime of soils in floodplain forests. 75-101p. In: Klimo E. (ed.): Floodplain forests of the temperate zone of Europe. Lesnická práce, Kostelec n/Èl. ISBN 978-80-87154-16-8. (275)

Cermák J., Nadezhdina N. **2008**. Whole tree modeling – trees and water relations: the role of trees in the urban environment – climate and hydrological control. In: Trees: the key to climate proofing our cities (Part 1) 7p. The Royal Geographic Society, Hyde Park, Kensington, London. 10th July 2008. (textbook)

Cermák J., Nadezdina N., Neruda J., Ulrich R. **2008**. Mechanical damage to root systems by forwarders and its application for objective derivation of safe width of extraction trails. In: Proceedings 3rd International Scientific Conference FORTECHENVI 2008 (Appendix), 389-392. May 26-30, 2008. Prague, Czech Republic. (274)

Urban J., Repo T., Cermák J. **2008**. Absorbing root surface area in Norway spruce under different soil frost levels. In: Woody roots and ecosystem services. CostE38 Workshop, Lisbon-Portugal, May 16 to 20, 2008.

 (poster)

Bequet R., Nadezhdina N., Cermàk J. and Ceulemans R. **2008**. Horizontal hydraulic redistribution in Douglas-fir coarse roots. CostE38 Workshop, Lisbon-Portugal, May 16 to 20, 2008. (poster)

Cermák J., Nadezhdina N., Gebauer R., Cudlín P., Martinková M., Stanìk Z., Koller J. **2008**. Combination of macro- and micro- approaches for studies of Norway spruce root systems: results and questions. In: Woody roots and ecosystem services. CostE38 Workshop, Lisbon-Portugal, May 16 to 20, 2008. (poster)

Cermák J., Nadezhdina N., Urban J., Ulrich R., Prax A., Culek J., Stanìk Z., Koller J. **2008**. Whole tree aboveground and belowground biometric characteristics in large Norway spruce trees between sites and impact of different neighbor group density. In:Woody roots and ecosystem services. CostE38 Workshop,Lisbon-Portugal, May 16 to 20,2008. (poster)

NadezhdinaN., Ferreira M.I., Silva R., Pacheco C.A. **2008**. Seasonal variation of water uptake of a Quercus suber tree in Central Portugal. Plant and Soil 305 (1-2): 105-119. (273)

CermákJ., NadezhdinaN., Meiresonne L., & CeulemansR. 2008. Scots pine root distribution derived from radial sap flow patterns in stems of large leaning trees. Plant and Soil 305 (1-2): 61-75. (272)

CermákJ., Tognetti R., Nadezhdina N., Raschi A. **2008**. Stand structure and foliage distribution in *Quercus pubescens* and *Quercus cerris* forests in Tuscany (central Italy). Forest Ecology and Management 255: 1810-1819. www.sciencedirect.com. (271)

TatarinovF., UrbanJ. and Cermák J. **2008.** The application of "clump technique" for root system studies of *Quercus robur* and *Fraxinus excelsior.* Forest Ecology and Management 255: 495-505. (270)

Cermák J., Barbier N., Butler A., Grace J., Koler J., McKevoy C., Meir P., Nicoll B., Omar M., Perks M., Thornily C. **2007**. New methodology for measuring absorbing root surface area. 5th CarboEurope-IP Meeting. Poznan, Poland 7-12 October, 2007. (poster)

Čermák J. and Prax A. **2007**. Water and its influence on the function stability of floodplain forests in southern Moravia. In: Vancura K. (ed.): “Forests and water in the heart of Europe”, (243-251pp.). Ministry of Agriculture of the Czech Republic and Institute of Forest Management, Brandýs nad Labem, 320p. (269)

Tobin B., Cermák J., Chiatante D., Danjon F., Di Iorio A., Dupuy L., Esher A.,. Jourdan Ch., Kaliokoski T., Laiho R., Nadezhdina N., Nicol B., Dupuy L., Pages L., Silva J., Spanos I. **2007**. Modeling coarse root structure and biomass. Plant Biosystems 141(3): 481-501. ISSN 1126-3504. (268)

Cermák J., NadezhdinaN., Meiresonne L., Ceulemans R. **2007**. Sap flow variation in stems and possibilities of its non-traditional applications. In: Ceulemans R. (ed.): Flander-Czech BWS workshop: »Plants, their roots and water relations ». (p.3.), Antwerpen, 8-9 Nov. 2007. (abstract)

Urban J. Cermák J., Ceulemans R. **2007**. Distribution of aboveground skeleton in pine. In: Ceulemans R. (ed.): Flander-Czech BWS workshop:»Plants, their roots and water relations ».(p.7.), Antwerpen, 8-9 Nov.2007.

 (abstract)

Bequet R., Nadezhdina N., Cermák J., Ceulemans R., and Janssens I.A. **2007**. In: Ceulemans R. (ed.): Flander-Czech BWS workshop: »Plants, their roots and water relations ». (p.8.), Antwerpen, 8-9 Nov.2007. (abstract)

NadezhdinaN., Cermák J., Bequet T., Ceulemans R. **2007**. Hydraulic redistribution within trees detected by sap flow measurements. In: Ceulemans R. (ed.): Flander-Czech BWS workshop: »Plants, their roots and water relations ». (p.11.), Antwerpen, 8-9 Nov.2007. (abstract)

Nadezhdina N., Ferreira M.I., Silva R., and Pacheco C.A. **2007**. Hydraulic redistribution in trees as a mechanism to survive drought. International Conference in Zvolen (Slovakia), Sept.2007. (poster)

Čermák J., Nadezhdina N. Urban J. and Cudlín P. **2007**. Absorbing root surface, leaf area and other crown parameters in large Norway spruce trees estimated by biometric, conductometric and sap flow pattern methods. 4th International Symposium on Physiological Processes in Roots of Woody Plants. Cost Demonstration, Bangor (UK) 16-20th Sept. 2007. (presentation)

Tobin B., Čermák J., Chiatante D., Danjon F., Di Iorio A., Dupuy L., Esher A.,. Jourdan Ch., Kaliokoski T., Laiho R., Nadezhdina N., Nicol B., Dupuy L., Pages L., Silva J., Spanos I. **2007**. Towards developmental modeling of tree root systems. 4th International Symposium on Physiological Processes in Roots of Woody Plants. Cost E38 Presentation, p.41. Bangor (UK) 16-20th Sept. 2007. (presentation)

Bequet R., Čermák J., Stanek Z. and Janssens I. **2007**. Temporal and spatial variation of the root absorption area as determined with the earth impedance method. 4th International Symposium on Physiological Processes in Roots of Woody Plants. Poster 59, p.121. Bangor (UK) 16-20th Sept. 2007. (poster)

Nadezhdina N., Čermák J., Meiresonne L., Ceulemans R. **2007**. Transpiration of Scots pine in Flanders growing on soil with irregular substratum. Forest Ecology and Management, 243: 1-9. (267)

Tesar M., Šír M., Lichner L., Čermák J. **2007**. Plant transpiration and net entropy exchange on the Earth’s surface in a Czech watershed. Biologia (Bratislava) 62(5): 1-5. (266)

Čermák J., Gašpárek J., De Lorenzi F., Jones HG. **2007.** Stand biometry and leaf area distribution in an old olive grove at Andria, southern Italy. Ann.For.Sci. 64:491-501.(DOI:10.1051/forest:2007026), [www.afs-journal.org](http://www.afs-journal.org).

 (265)

Čermák J. Kučera N. Bauerle W.L. Phillips J.and Hinckley TM. **2007.** Tree water storage and its diurnal dynamics related to sap flow and changes of trunk volume in old-growth Douglas-fir trees. Tree Physiology 27: 181-198. (264)

Verbeeck H., Steppe K., Nadezhdina N., Op De Beeck M., Deckmyn G., Meiresonne L., Leeme R., Čermák J., Ceulemans R. and Janssens I. **2007**. Model analysis of the effects of atmospheric drivers on storage water use in Scots pine. Biogeosciences 4 (5):657-671. (263)

Verbeeck H., Steppe K., Nadezhdina N., Op de Beeck M., Deckmyn G., Meiresonne L., Lemeur R., Čermák J., Ceulemans R., Janssens I.A. **2007**. Storage water use and transpiration in Scots pine“ a modeling analysis using ANAFORE. Tree Physiology 27: 1671-1685. (262)

Nadezhdina N., Nadezhdin V., Ferreira M.I. and Pitacco A. **2007**. Variability with xylem depth in sap flow in trunks and branches of mature olive trees. Tree Physiology 27: 105-113. (261)

Poyatos R., Martínez-Vilalta J., Čermák J.,Ceulemans R., Granier A., Irvine J., Köstner B., Lagergren F., Meiresonne L., Nadezhdina N., Zimmermann R., Llorens P., Mencuccini M. **2007**. Plasticity in hydraulic architecture of Scots pine across Eurasia. Oecologia 153: 245-259. (260)

Poyatos R., Čermák J., Llorens P. **2007**. Variation in the radial patterns of sap flux density in pubescent oak (*Quercus pubescens* Willd.) and its application for tree and stand transpiration measurements. Tree Physiology 27: 537-548. (259)

Nadeždina N. **2006**. Sap flow measurements with the heat field deformation method. 6th International Workshop on Measuring Xylem Sap Flow and its Application to Plant Science. S.Burgess (ed.), Perth, Western Australia 27-30th. Nov. 2006. (abstract)

Čermák J., Nadeždina N. **2006**. Sap flow and tree architecture studies in forest ecology. 6th International Workshop on Measuring Xylem Sap Flow and its Application to Plant Science. S.Burgess (ed.), Perth, Western Australia 27-30th. Nov. 2006. (abstract)

Tributsch H., Čermák J., Nadezhdina N. **2006**. Tensile water and the ascent of sap in trees as a dynamic selforganization phenomena. 6th International Workshop on Measuring Xylem Sap Flow and its Application to Plant Science. S.Burgess (ed.), Perth, Western Australia 27-30th. Nov. 2006. (abstract)

Gartner K., Nadezhdina N., Leitgeb E., English M., Čermák J. **2006**. Sap flow of birch and Norway spruce during European Heat and drought in summer 2003. 6th International Workshop on Measuring Xylem Sap Flow and its Application to Plant Science. S.Burgess (ed.), Perth, Western Australia 27-30th. Nov. 2006. (poster)

Becquet R. **2006**. Comparative study of the sap flow of coniferous and deciduous trees with different root systems and at a different water supply. Ecole Interfacultaire de Bioingénierie, Université Libre de Bruxelles. (Dipl.Thesis) (cooperation)

Alexandr P., Čermák J., Fér F. **2006.** „Background for objectivization of forensic expertises based on historical data and functional diagnostics of trees applied on an example of Šumava Mountains National Park“ (in Czech, English abstract). 71-80pp. In: Proc. „Historie a vývoj lesů v českých zemích“ (Forest history and their development in Czechia) P.Neuhoferová (ed.). Šumava na Srní, Czech Rep., Sept. 17-18. 2006. (ISBN 80-213-1536-9, ISBN 978-80/86874-00-5, ČZU & NZM Praha 2006). (258)

Čermák J., Nadeždina N., Staněk Z., Hruška J. Ulrich R. **2006**. “Non-invasive instrumental studies of root system asymmetry” (in Czech). 27-32pp. in Proc. National meeting ”Plošné poškození lesu zpusobené povetrnostními vlivy” (Widespread forest damage caused by winds), Vicena I., Kyžlík P., Kubátová I. (eds.), Ceská lesnická spolecnost a Ministerstvo zemedelství CR, Praha 27.09.2006. (ISBN 80-02-01838-9). (257)

Čermák J. and Nadezhdina N. **2006**. Transpiration of trees and forests under contrasting soil water conditions and its relation to tree architecture. In: International Biohydrology Conference 2006: Impact of Biological Factors on Soil Hydrology. Dekker L.W., Hallett P.D., Lichner, L., Novák V., Šír M. (eds.)., 1-2pp. (keynote lecture) Praha, Czech Republic, Sept.20-22, 2006. http://www.ih.savba.sk/biohydrology2006), (256)

Šír M., Lichner L., Tesař M., Čermák J., Nadezhdina N. **2006**. Plant transpiration and self-organization. International Biohydrology Conference 2006: Impact of Biological Factors on Soil Hydrology. Dekker L.W., Hallett P.D., Lichner, L., Novák V., Šír M. (eds.). (http://www.ih.savba.sk/biohydrology2006), Praha, Czech Republic, Sept.20-22, 2006. (poster)

Urban J., Tatarinov F., Čermák J. **2006**. Distribution of root biomass in the floodplain forest. In: Internat.Conf.: “15 years of EU supported ecophysiological research in the Czech Republic”. Olomouc, 18-21.Sept.2006.

 (poster)

Tributsch H., Nadeždina N., Čermák J. **2006**. Infrared images of heat fields around a linear heater in tree trunks: what can be learned about sap flow measurement? Ann. For. Sci. 7: 1-8. (255)

Čermák J., Nadezhdina N. and Cudlín P. **2006**. Sap flow patterns in stems as related to water absorbed by superficial and sinker roots in large trees. In: VIII. Spanish-Portugese Symposium on Plant Water Relations. “Water in Plants: From Genes and Molecules to Communities and Ecosystems”. Morales D.M. and Jimenez M.S. (eds.), 11-14pp. Puerto de la Cruz, Tenerife, Spain, 17-21. Sept. 2006. ISBN: 84-690-0174-4. (254)

Čermák J., Nadezhdina N. and Cudlín P. **2006**. Size and absorbing activity of superficial and sinker roots as detected using earth impedance and sap flow patterns in stems. In: Proc. COST E38: Woody root processes, Godbold D. and Brunner I. (eds.), Session 3, p.17, Finish Forest Res. Inst., Univ. of Joensuu, Rovaniemi, Finland, Sept.10-12,2006. (abstract)

Nadezhdina N., Čermák J., Gašpárek J., Nadezhdin V. and Prax A. **2006**. Vertical and horizontal water redistribution within Norway spruce (*Picea abies*) roots in the Moravian Upland. Tree Physiology 26: 1277-1288. (253)

Verbeeck H., Steppe K., Nadezhdina N., Op de Beck M., Deckmyn G., Meiresonne L., Lemeur R., Čermák J., Ceulemans R., Janssens I.A. **2006**: Storage water use in Scots pine: a modeling analysis using ANAFORE. Carboeurope IP summer school on eddy covariance flux measurements, Wepion, Belgium, 10-21 July 2006.

 (poster)

Čermák J., Ulrich R., Stanek Z., Koller J., Aubrecht L. **2006**: Electric measurement of the absorbing surfaces in whole tree roots by the earth impedance method - II. Verification based on allometric relationships and root severing experiments. Tree Physiology, 26: 1113-1121. (252)

Aubrecht L., Stanek Z., Koller J. **2006**: Electric measurement of the absorbing surfaces in whole tree roots by the earth impedance method - I. Theory. Tree Physiology, 26: 1105-1112. (cooperating group)

Nadezhdina N, Čermák J, Neruda J, Prax A, Ulrich R, Nadezhdin V, Gašpárek J, Pokorný E. **2006**: Roots under the load of heavy machinery in spruce trees. European J.For.Res. 125: 111-128. (251)

Čermák J., Neruda J., Nadežhdina N., Ulrich R., Martinkova M., Gebauer R., Pokorný E., Prax A., Nadeždin V., Hruška J., Gašpárek J., Culek I. **2006.** Identification of tree root system damage caused by heavy machinery using a new measurement technology suitable for precision forestry. 291-306pp. In: Proc. of the Internat. Precision Forestry Symp. “Precision forestry in plantations, semi-natural and natural forests”,Stellenbosch Univ., South Africa, 5-10 Mart 2006, 504p. (abstract)

Nadezhdina N., Čermák J., Ceulemans R. **2006**. Fast changing of tree root systems activity detected by sap flow measurements. In: Woody Root Processes - Revealing the Hidden Half. Israel, 4-6.Feb.2006. p.36 (poster)

Čermák J., Nadezhdina N., Ceulemans R., Meiresonne L., Stanìk Z., Koller J. **2006**. Whole-tree root systems visualized and measured by electric and sap flow methods. In: Woody Root Processes - Revealing the Hidden Half. Israel, 4-6. Feb. 2006. p.35. (poster)

Urša V., Nadezhdina N., Čermák J., Gašpárek, J., Urbanèiè, M., Čater M., Simonèiè P. **2006**. Root biomass and transpiration in underplanted beech in spruce stand on Pohorje. In: Woody Root Processes - Revealing the Hidden Half. Israel, 4-6. Feb. 2006. p.7. (poster)

Ferreira, M.I., Pachero, C.A., Nadezhdina, N., Silva J.S., Silva, R. **2006**. Root system in relation to root functioning in Quercus suber trees in the region of Lisbon. In: Woody Root Processes - Revealing the Hidden Half. Israel, 4-6. Feb. 2006. p.2. (poster)

Prax A., Richter W., Čermák J., Kučera J., Hybler V. **2006**. Hydrological and moisture regime of soils in floodplain forests. In: Klimo M., Hager F. (eds.): Floodplain forests. 1-20pp. (textbook)

Čermák J., Kučera J., Prax A., Nadeždina N. **2006**. Transpiration of floodplain forests in southern Moravia (in Czech). In: Kulhavy J. (ed.) Ekologie lesa II. 14-24pp. Mendel Agricult.and Forestry Univ. in Brno.

 (textbook)

Nadeždina N., Čermák J., Neruda J., Prax A., Ulrich R., Nadeždin V., Gašpárek J., Pokorný E. **2005**. Impact of harvester technology on conducting system in spruce trees. 163-170pp. In: Proc. FORMEC 2005, Scientific cooperation for forest technology improvement, Košir B. (ed.), Slovenia-Austria, 26-29. Sept. Ljubljana 2005, 214pp. (250)

Schmidt I., N. Nadezhdina, J. Čermák **2005**: Root distribution and competition. In: G. Oleskog und M. Löf (Hrsg.), The ecological and silvicultural bases for underplanting beech (*Fagus sylvatica* L.) below Norway spruce shelterwood (*Picea abies* L. Karst.). Schriften aus der Forstl. Fak. der Univ. Göttingen und der Niedersächs. Forstl. Versuchsanstalt. J.D. Sauerländer’s Verlag. Band 139, 20-27. (249)

Kazda M., M. Čater, J. Čermák, N. Nadezhdina, M. Linnert B. v. Lüpke, J. Salzer and I. Schmid **2005**: Light climate, canopy influence and plant reaction. In: G. Oleskog und M. Löf (Hrsg.), The ecological and silvicultural bases for underplanting beech (*Fagus sylvatica* L.) below Norway spruce shelterwood (*Picea abies* L. Karst.). Schriften aus der Forstl. Fak. der Univ. Göttingen und der Niedersächs. Forstl. Versuchsanstalt. J.D. Sauerländer’s Verlag. Band 139, 40-47pp. (248)

Tesař M., Šír M., Čermák J., Lichner L. **2005**. Entropy production on biotic and abiotic surfaces. In: Proc. Ensuring the quality and reliability of land and atmosphere. Essential Climate Variables. The EU-25 contrib., Krakow, Poland, 15-16. Dec.2005. 6p. (247)

Čermák J., Nadeždina N., Šír M., Tesař M. **2005**. Different leaf distribution across projected crown areas and transpiration of upper and lower crowns. In: Proc. Entropy production on biotic and abiotic surfaces. In: Proc. Ensuring the quality and reliability of land and atmosphere. Essential Climate Variables. The EU-25 contribution, Krakow, Poland, 15-16. Dec.2005. 5p. ([http://www.evergreen.edu/ican/research/cvÈermák/html](http://www.evergreen.edu/ican/research/cv%C3%88erm%C3%A1k/html))

 (246)

Čermák J. and Nadezdina N. **2005**. Instrumental studies of water relations and structure in trees and forest stands applied to evaluate their living strategy and survival chances in changing environmental conditions. In: Proc. Life within and Beneath the Tree: Exploring the Tree as a Complex System - The Transition from Health to Disease (N.Fay, ed.), Keele Univ.UK, 17-18th Nov.2005, 38-45pp. (245)

Čermák J. Kučera J. Bauerle W.L and Hinckley TM. **2005.** “Transpiration and stored water in giant trees from the viewpoint of their survival in virgin forests”(in Czech). In: Proc. Nat. Conf. „Jedle bělokorá-2005“, Srní 31.10.-1.11.2005, 57-68. (244)

Tatarinov F.A., Kučera J., Cienciala E. **2005**. The analysis of physical background of tree sap flow measurements based on thermal methods. Measurements Science and Technology 16: 1157-1169. (cooperating group)

Nadezdina N. Čermák J. Neruda J. Prax A. Ulrich R. Nadezhdin V. Gašpárek J. Pokorný E. **2005**. Impact of harvestor technology on conducting system in spruce tree. 6p. In: Proc. Internat. Conf. “Formec”, Ljubljana, Oct.27-29.2005. (243)

Čermák J., Prax A. and Nadeždina N. **2005**: „Problems of permanent coexistence of trees and buildings in cities“ (in Czech). In: Proc.„Stromy a jejich vliv na stavby“. 36-53pp. Frýdlant n/Ostrav., Beskydy, Czechia. 21-23. Sep.2005. (242)

Tributsch H., J. Čermák, N. Nadeždina, **2005**. Kinetic studies on the tensile state of water in trees. J.Phys.Chem. B, 109: 17693-17707. (241)

Čermák J., Nadezdina N., Gašpárek J., Adamčík L., Stanek Z. **2005**:New technology for whole-tree root systems studies. In: Proc. 11th International Siver Fir Symposium “Challenges for the management of European silver fir (Abies alba Mill.) under changing climatic and economic conditions”. p.15. 11th Internat. Silver Fir Symp.: “Challenges for the management of European Silver fir (*Abies alba* Mill.) under changing climatic and economic conditions”. Poiana Brasov, Romania, 4-9. Sep. 2005. (abstract)

Nadeždina N., J. Čermák, J. Gašpárek, V. Nadezhdin, **2005**: Study of water redistribution in the soil by roots of woody species on the basis of sap flow measurements. In: Proc. 11th International Siver Fir Symposium “Challenges for the management of European silver fir (Abies alba Mill.) under changing climatic and economic conditions”. p.51. in 11th Internat. Silver Fir Symp.: “Challenges for the management of European Silver fir (*Abies alba* Mill.) under changing climatic and economic conditions”. Poiana Brasov, Romania, 4-9. Sep. 2005.

 (abstract)

Tatarinov F. Bochkarev Y. Oltchev A. Nadezhdina N. Čermák J. **2005**. Effect of contrasting water supply on the diameter growth of Norway spruce and aspen in mixed stands: a case study from the southern Russian taiga. Ann.For.Sci. 62:1-10. (240)

Čermák J. and Nadeždina N. **2005**: “Instrumental methods for measurement of sap flow rate and root system architecture in woody species” (in Czech). In: Proc. „Hydrologie malého povodí“ 37-44 pp. Praha, Czechia, 14-15. Sep.2005. (239)

Čermák J. and Nadeždina N. **2005**:“Transpiration, or extraction of soil water under variable soil moisture in relation to tree architecture (in Czech)“.In.Proc.„Hydrologie malého povodí“45-54pp.Praha,Czechia,14-15.Sep.2005. (238)

Šír M., J.Čermák, N.Nadeždina, V.Nadeždin, M.Tesar, **2005**. „Comparing of two models of forest transpiration“ (in Czech). In: Proc. „Hydrologie malého povodí“ 307-312 pp. Praha, Czechia, 14-15. Sep.2005. (237)

Kazda, M. Čater, J. Čermák, N. Nadhezdina, M. Linnert B. v. Lüpke, J. Salzer and I. Schmid **2005**: Light climate, canopy influence and plant reaction. In: G. Oleskog und M. Löf (Hrsg.), The ecological and silvicultural bases for underplanting beech (*Fagus sylvatica* L.) below Norway spruce shelterwood (*Picea abies* L. Karst.). Schriften aus der Forstl. Fak. der Univ. Göttingen und der Niedersächs.Forstl.Versuchsanstalt. J.D.Sauerländer’s Verlag. Band 139,40-47. (236)

Čermák J. Nadeždina N. Cudlín P. Gašpárek J. Adamčík L. Stanek Z. **2005**. Root system distribution and size measurements in Norway spruce trees. In: Proc.Int.Symp. COST E38: Woody root processes - Impact of different tree species. p.17. Tartu, Estonia, 5-9 June 2005. (abstract)

Gašpárek J. Adamčík L. Čermák J. Hruška J. Culek I. **2005**. Using of ground-penetrating radar for morphology investigation of spruce root system. In: Proc.Int.Symp. COST E38: Woody root processes - Impact of different tree species. p.24. Tartu, Estonia, 5-9 June 2005. (abstract)

Nadezhdina N. Čermák J. Gašpárek J. Nadezhdin V. and Prax A. **2005**. Horizontal and vertical water redistribution in Norway spruce roots. In: Proc.Int.Symp. COST E38: Woody root processes - Impact of different tree species. p.41. Tartu, Estonia, 5-9 June 2005. (abstract)

Nadezhdina N.Ferreira M.I. Silva R. and Pacheco C.A. **2005**. Hydraulic lift in roots of Quercus suber tree in low Tagus valley during summer drought. In: Proc.Int.Symp. COST E38: Woody root processes - Impact of different tree species. p.42. Tartu, Estonia, 5-9 June 2005. (abstract)

Hruška J. Gašpárek J. Culek I. **2005**. „Root system visualization using georadar. 69-76pp. In: Methods for improved determination of disturbance of tree roots in spruce stands by forwarders. I. Selection and verification of methods“ (in Czech). Neruda J. (ed.) Folia Universitatis Agriclturae et Silviculturae Mendelianae Brunensis. Facultas Silviculturae et Technologiae Ligni. Brno, Respublica Bohemica, 176p. (235)

Čermák J. Gašpárek J. Adamčík L. Culek I. Čermák M. Ulrich R. **2005**. „Root system visualization using supersonic air-stream. 77-82pp. In: Methods for improved determination of disturbance of tree roots in spruce stands by forwarders. I. Selection and verification of methods“ (in Czech). Neruda J. (ed.) Folia Universitatis Agriclturae et Silviculturae Mendelianae Brunensis. Facultas Silviculturae et Technologiae Ligni. Brno, Respublica Bohemica, 176p. (234)

Nadeždina N, Čermák J. Nadeždin V. Gašpárek J. **2005**. „Changes of transpiration flow in roots and tree stems. 111-126pp. In: Methods for improved determination of disturbance of tree roots in spruce stands by forwarders. I. Selection and verification of methods“ (in Czech). Neruda J. (ed.) Folia Universitatis Agriclturae et Silviculturae Mendelianae Brunensis. Facultas Silviculturae et Technologiae Ligni. Brno, Respublica Bohemica, 176p. (233)

Čermák J. and Nadeždina N. **2005**: “Transpiration estimates through sap flow and measurement of operative structures in woody species important for their water relations” (in Czech). In Proc. “Evaporation and evapotranspiration”, Rožnovský J. (ed.), Brno, March 23, 2005. 10pp. (232)

Gašpárek J, Adamcík L, Stanek Z, Čermák J. **2004**: Root system surfaces in whole trees - beech saplings estimated by optical and electrical methods. In: COST E38 Proc. Woody Root Processes under a Changing Environment, Radoglou P. (ed.), p.42, Thessaloniki-Greece, 27-20.October 2004. (abstract)

Meiresonne L., Sampson D.A., Kowalski A.S., Janssens I.A., Nadezhdina N., Čermák J., Van Slycken J., Ceulemans R. **2004**: Replies to the comments by F.Hupet, M.Vanclooster on “Water flux estimates from a Belgian Scots pine stand: a comparison of different approaches”. J.of Hydrology 291: 154-157. (231)

Nadezdina N, Ferreira M.I, Silva R, Pacheco C.A, Meiresonne L, Minnaert M, Gartner K. **2004**: Variable function of tree root systems depicted through long-term sap flow observations in roots and different stem xylem layers. In: COST E38 Proc. Woody Root Processes under a Changing Environment, Radoglou P. (ed.), p.31, Thessaloniki-Greece, 27-20.October 2004. (abstract)

Čermák J, Nadezdina N, Gašpárek J, Adamčik L, Stanek Z, Ulrich R. **2004**: Root systems measurements and visualization in large trees and their root/leaf area ratio. In: COST E38 Proc. Woody Root Processes under a Changing Environment, Radoglou P. (ed.), p.30, Thessaloniki-Greece, 27-20.October 2004. (abstract)

Čermák J., Nadezhdina N., Neruda J., Prax A., Ulrich R., Nadezhdin V., Gašpárek J., Pokorný E. **2004**. Root system damage in shallow rooting species (Norway spruce, *Picea abies* (L) Karst.) by movement of heavy logging and hauling machinery in forest stands. Proc.Nat.Conf. „Root system-the tree foundation“ Krtiny 2004,125-136pp. (230)

Čermák J., Kučera J., Nadezhdina N. **2004**: Sap flow measurements and their scaling up to tree and stand levels - Methods of trunk heat balance and heat field deformation. 4-5pp. In: Proc. Water use of woody crops - techniques, issues, modeling and applicationon water management. Ilhavo, Portugal May 20-21, 2004. Inst.Superior de Agronomia, Tech.Univ.Lisbon, Portugal. (enlarged abstract)

Ferreira I.F.R, David T.S, Silvestre J, Paco T.A, Nadezhdina N, Thomsen A, Silva R.M, Silva A.L. **2004**: Sap flow measurements and their scaling up to tree and stand levels - Granier method. 6-7pp. In: Proc. Water use of woody crops - techniques, issues, modeling and applicationon water management. Ilhavo, Portugal May 20-21, 2004. Inst. Superior de Agronomia, Tech.Univ.Lisbon, Portugal. (enlarged abstract)

Nadezhdina N, Ferreira I.F.R, Paco T.A. **2004**: Water stress indicators - use of sapflow measurements for stress diagnosis. 13-14pp. In: Proc. Water use of woody crops - techniques, issues, modeling and application on water management. Ilhavo, Portugal May 20-21, 2004. Inst. Superior de Agronomia, Tech.Univ.Lisbon, Portugal.

 (enlarged abstract)

Čermák J, Gašpárek J, DeLorenzi F, Jones H.G. **2004**: Main biometric parameters and leaf area distribution in an old olive trees and orchard in southern Italy. 24-25pp. In: Proc. Water use of woody crops - techniques, issues, modeling and application on water management. Ilhavo, Portugal May 20-21, 2004. Inst. Superior de Agronomia, Tech.Univ.Lisbon, Portugal. (enlarged abstract)

Čermák J, Gašpárek J, DeLorenzi F, Jones H.G. **2004**: Leaf area distribution measurements in solitary growing old trees. 26-27pp. In: Proc. Water use of woody crops - techniques, issues, modeling and application on water management. Ilhavo, Portugal May 20-21, 2004. Inst. Superior de Agronomia, Tech.Univ.Lisbon, Portugal.

 (enlarged abstract)

Nadezhdina N, Ferreira M.I, Silva R, Pacheco C.A. **2004**: Seasonal changes in water use of evergreen oak woodlands - sap flow in roots and stems of *Quercus suber* tree. 40-41pp. In: Proc. Water use of woody crops - techniques, issues, modeling and applicationon water management. Ilhavo, Portugal May 20-21, 2004. Inst. Superior de Agronomia, Tech.Univ.Lisbon, Portugal. (enlarged abstract)

Čermák J., Ulrich R. **2004**: Biometric characteristics of spruce (Picea abies (L) Karst.) on the limed and control plots in the Ore Mts. (in Czech). In: Proc. Novák J. and Slodičák M. (eds). „Výsledky lesnického výzkumu v Krušných horách v roce 2003“. 195-204pp., VÚLHM VS Opoèno, 2004. (229)

Čermák J., Kučera J. and Nadezhdina N. **2004**. Sap flow measurements with two thermodynamic methods, flow integration within trees and scaling up from sample trees to entire forest stands. Trees, Structure and Function 18:529-546. (228)

Nadezhdina N. Tatarinov F. Ceulemans R. **2004**. Leaf area and biomass of *Rhododendron* understorey in a stand of Scots pine. Forest Ecology and Management 187: 235-246. (227)

Nadezhdina N., Čermák J., Tributsch H. **2004**. Infra-red images of sap flow in stems of lime trees under natural and experimental conditions. Ann.Sci.For.61: 203-213. (226)

Čermák J. **2003**. Outline of tree water relations (in Czech). Chapter 6 In: Ekologie lesa – doplnkový ucební text (Kulhavý J. ed.), Textbook, Mendel University of Agriculture and Forestry in Brno 81-100pp. (textbook)

Čermák J., Prax A. **2003**: Transpiration and water balance in a floodplain forest (in Czech). In: J.Hrib (ed.): Hydroekologie mokradu Kancí obora, Lesy České republiky s.p., 39-43pp. (225)

Gartner K., Leitgeb E., Nadezhdina N., English M. and Čermák J. **2003**: Soil moisture and diurnal variation of sap flow in birch and Norway spruce. Effects of the summer drought 2003. In: Conference on water and society. Needs, Challenges and Restrictions, BOKU Vienna, Nov.19-21,2003. p.59. (224)

Čermák J., Nadezhdina N., Stanek Z., Hruška J. **2003**: Field methods for measurements and visualization of root systems and sap flow in large trees. In: Conference on water and society. Needs, Challenges and Restrictions, BOKU Vienna, Nov.19-21,2003. (poster)

Adamčík L., Čermák J., Gašpárek J. **2003**: Leaf area distribution of underplanted beech seedlings estimated using ground-based side images. In: Conference on water and society. Needs, Challenges and Restrictions, BOKU Vienna, Nov.19-21,2003. (poster)

Prax P. and Čermák J. **2003**: Urban tree root systems and tree survival near sewers and another constructions. 1-10pp. In: Proc. nato arw enhancing Urban Environment: Environmental Upgrading of Municipal Pollution Control Facilities and Restoration of Urban Waters. Rome, Italy, Nov.5-8, 2003. (223)

Nadeždina N., Gašpárek J., Nadezhdin V. and Čermák J. **2003**: Sap flow dynamics in terms of competition between overstorey spruce and understorey beech in southern Moravia. International Conference „The question of conversion of coniferous forests - ConForest“, Freiburg im Breisgau, Germany, 27 Sept.-02 Oct.2003, (222)

Nadezhdina, N. and Čermák, J. **2003**: Instrumental methods for studies of structure and function of root systems in large trees. Proc. of the 5th International Workshop on Field Techniques for Environmental Physiology, Tenerife, Canary Islands, Spain, 16-22 March 2003, 23-33pp. (221)

Čermák J., Nadezhdina N. and Martinek J. **2003**: 3D visualization of complex sap flow patterns across tree stems - a methodical note. Proc. of the 5th International Workshop on Field Techniques for Environmental Physiology, Tenerife, Canary Islands, Spain, 16-22 March, 2003, 45-51pp. (220)

Čermák J. Kucera J. and Nadezhdina N. **2003**: Sap flow measurements, integration within trees and scaling up from sample trees to entire forest stands. Proc. of the 5th International Workshop on Field Techniques for Environmental Physiology, Tenerife, Canary Islands, Spain, 16-22 March 2003, 52-62pp. (219)

Gašpárek J., Čermák J., Jones H.G., DeLorenzi F. **2003**: Leaf area distribution estimated using ground-based side images in an olive orchard. 5th International Workshop on Field Techniques for Environmental Physiology, Tenerife, Canary Islands, Spain, 16-22 March, 2003. (poster)

Nadezhdina N., Čermák J., Nadezhdin V., Gašpárek J., Ulrich R., Neruda J. **2003**: Responses of sap flow in spruce stems and roots to loading by heavy forest machinery. In: 2nd International Scientific Conference "Forest and Wood-Processing Technology and the Environment", Brno, Czech Republic, May 26-30, 2003. 9p. (218)

Pietsch S. Hasenauer H. Kučera J. and Čermák J. **2003**: Modelling the effects of hydrological changes on the carbon and nitrogen balance of oak in floodplains. Tree Physiology 23: 735-746. (217)

Nadezhdina N. and Čermák J. **2003**: Instrumental methods for studies of structure and function of root systems in large trees. J.of Experimental Botany 54 (387): 1511-1521. (216)

Phillips N.G., Ryan M.G., Bond B.J., McDowell N.G., Hinckley T.M. and Čermák J. **2003**. Reliance on stored water with tree size in three species in the Pacific Northwest. Tree Physiology 23: 237-245. (215)

Meiresonne L, D.A. Sampson, A.S. Kowalski, I.A. Janssens, N. Nadezhdina, J. Čermák, J., Van Slycken and R. Ceulemans. **2003**. Water flux estimates from a Belgian Scots pine stand: a comparison of different approaches. J.of Hydrology, 270(3-4): 230-252. (214)

Peramaki M., Nadezhdina N., Čermák J., Savanto S., Vesala T., Hari P. and Nikinmaa E. **2002**: Field measurements of diurnal diameter change of the stem of Scots pine: comparison with other water status measurements. In: International Workshop on the Integration of Long-distance Transport Processes in Plants. Harvard Forest, Oct.10-12, 2002. (poster)

Leitgeb E., Gartner K., Nadezdina N., English M., Čermák J. **2002**: Ecological effects of pioneer species on soil moisture regimee in an early successional stage, following wind-throw in a spruce stand. Proceedings of the IUFRO Conference on Restoration of Boreal and Temperate Forests. Vejle, Denmark, May 2002. Gardiner,E.S., Breland,L.J. [Comp.] Reports / Skov & Landskab, (11): 193-194. (213)

Oltchev A., Čermák J., Nadezhdina N., Tatarinov F., Tischenko A. , Ibrom A. and Gravenhorst G. **2002**: Transpiration of a mixed forest stand: field measurements and simulation using SVAT models. Boreal Envir.Research, 7(4):389-397. (212)

Oltchev A., Čermák J., Gurtz J., Tischenko A., Kiely G., Nadezhdina N., Zappa M., Lebedeva N., Vitvar T., Albertson J.D., Tatarinov F., Tischenko D., Nadezhdin V., Kozlov B., Ibrom A., Vygodskaya N., Gravenhorst G. **2002**: The response of the water fluxes of the boreal forest region at the Volga's source area to climatic and land-use changes. Physics and Chemistry of the Earth 27: 675-690. (211)

Čermák J. and Prax A. **2002**: Floodplain forests in southern Moravia - transpiration and water balance. Presented at the EuroMAB Workshop “The role of wetlands in biosphere reserves”, Mikulov, South Moravia, Czech Rep., Oct.13-18, 2002. Published in: Hydroecology of Wetland “Kancí obora”, Vybíral J. and Pražák O. (eds.), 29-33pp. Forest of Czech Republic, Forest Enterprise Židlochovice (ISBN 80-238-9403-X) (210)

Čermák J. Prax A. **2002**: Transpiration and water balance in a floodplain forest. The role of wetlands in biosphere reserves. Mikulov, Czech Republic, Oct.13-18, 2002. (XIV. Česko-slovenská bioklimatologická konf. Bioklima-Prostredí-Hospodárství, Rožnovský J. and Litschman T. (eds.), 508-511 pp., (ISBN 80-85813-998), Lednice na Morave, 2-4.Sept.2002. (209)

Čermák J. Prax A. and Nadezhdina N. **2002**: “Examples of physical interactions of trees and constructions” (in Czech). In: Proc. National Workshop “Urban greenery and landscape” (Zelen staveb v krajine), 14p., Mendel Univ. Brno, June 13,2002. (208)

Nadezhdina N. Čermák J. Ceulemans R. **2002**: Radial pattern of sap flow in woody stems related to positioning of sensors and scaling errors in dominant and understorey species. Tree Physiology 22:907-918. (207)

Čermák J. Jimenez MS. Gonzales-Rodriguez AM. Morales D. **2002**: Laurel forests in Tenerife, Canary Islands: Efficiency of water conducting system in *Laurus azorica* trees. Trees 16: 538-546. (206)

Morales D. Jimenez MS. Gonzalez-Rodriguez A.M. Čermák J. **2002**: Laurel forests in Tenerife, Canary Islands: Vessel distribution in stems and in petioles of *Laurus azorica* trees. Trees 16: 529-537. (205)

Stokes A. Fourcaud T. Hruška J. Čermák J. Nadyezhdina N. Nadyezhdin V. Praus L. **2002**: An evaluation of different methods to investigate root system architecture of urban trees *in situ*. I. Ground penetrating radar. Journal of Arboriculture 28-1:1-9. (204)

Chiesi M. Maselli F. Bindi M. Fibbi L. Bonora L. Raschi A. Čermák J. Nadezhdina N. **2002**: Calibration and application of forest-BCG in a Mediterraen area by the use of conventional and remote sensing data. Ecological Modeling 154:251-262. (203)

Pietsch S. Hasenauer H. Čermák J. **2001**: Modeling water relations of Norway spruce stands. 91-92 pp., In: 14. Tagung des Osterreichischen Arbeitskreises fur Pflanzenphysiologie, 13-16.Juni 2001 in Neuberg. (202)

Šustek S. **2001**: Comparison of beech (*Fagus sylvatica* (L.) Mill.) and spruce (*Picea abies* (L.) Karst.) root biomass in limed and control localities at Bílý Kríž in the Beskids. Ekologia (Bratislava) 20, Suppl.1/2001: 61-78. (201)

Čermák J. and Prax A. **2001**: “Transpiration and water balance of floodplain forests in southern Moravia“ (in Czech). In: Proc. IV. Workshop “NIVA from multi-discipline viewpoint”, by Faculty of Natural History, Masaryk Univ. and Geotest Inc., Brno, 95-100 pp., Brno-Slatina, Oct.10, 2001. (200)

Čermák J. Nadezhdina N. Jimenez MS. Morales D. Raschi A. Tognetti R. **2001**: Long-term sap flow and biometric studies in laurel and oak forests - Canary Islands and Italy. In: Proc. International Conf."Forest Research: A Challenge for an Integrated European Approach",Radoglou,K.(ed.)Vol.II.,489-494p.,Thesalonniki, Greece, Aug.27-Sept.1, 2001. (199)

Reiter I.M. Čermák J. Kazda M. **2001**: A vertical profile of mature oak in Moravian floodplain forests. IAVS meeting, Freising, Germany. (poster)

Nadezhdina N., Čermák J., Morales D., Jimenez M.S., Raschi A., Tognetti R., Ferreira M.J. **2001**. Variations in conducting patterns of trees growing in three Mediterraen countries and relations to crown development. 507-512pp. In: Proc. Int.Conf.: “Forest Research - A Challenge for an Integrated European Approach”. Radoglou K. (ed.) NAGREF - Vol.II., 507-512p., Thesalonniki, Greece, Forest Res. Inst. Thessaloniki, Aug.27-Sept.1, 2001.

 (198)

Pietsch S., Hasenauer, H., Čermák J. **2001**: Modeling water relations of Norway spruce stands. In: 14.Tagung des Osterreichisches Arbeitskreises fur Pflanzenphysiologie. 91-92pp. 13-16.June 2001. in Neuberg an der Murz/Stmk. (enlarged abstract)

Čermák J. Kučera,J. Phillips N. and Hinckley TM. **2001**. Diurnal dynamics of water storage in old-growth Douglas-fir trees. In: Vesala T. (ed.): Water transport in woody plants and linkages to plant structure and productivity. p.16. Workshop in Hytiala Forest Station, Finland (Magnus Ehrnrooth Foundation). March 14-16, 2001. (197)

Nadezhdina N. and Nadezhdin V. **2001**. Variation of sap flow and conducting pathways in tree stems as detected by radial pattern of sensors. In: Vesala T. (ed): Water transport in woody plants and linkages to plant structure and productivity. p.16.Workshop in Hytiala Forest Station, Finland (Magnus Ehrnrooth Foundation).March 14-16,2001. (196)

Čermák,J. Kučera,J. Prax A. Bednárová E. Tatarinov F. Nadyezhdin V. **2001**: Long-term course of transpiration in a floodplain forest in southern Moravia associated with changes of underground water table. Ekologia (Bratisl.) Vol.20, Suppl.1: 92-115. (195)

Čermák J. and Prax A. **2001**. Water balance of the floodplain forests in southern Moravia considering rooted and root-free compartments under contrasting water supply and its ecological consequences. Ann.Sci.For. 58:1-12.

 (194)

Brodie L.C. and Harrington C.A. **2001**: Sap flow rates of Douglas-fir seedlings under varying microsite conditions. In: PNW, USA. (cooperating group)

Čermák J. Nadezhdina N. Prax A. **2001**: "Tree roots and constructions" (in Czech). In: Proc. 3. National arboristic conference with international participation: Tree for life-life for trees III.12p. Melník, 22-25.Aug. 2001

Nadezhdina N. Čermák J. Tributsch H. **2000**. Heat field around the linear heater used for sap flow measurement by the HFD-method as observed by the infra-red camera. 155-161pp. In: 5th International Workshop on Measuring Sap Flow in Intact Plants. Tognetti,R. and Raschi A. (eds.), Firenze, Italy, 9-10 Nov.2000. Fondazione per la Meteorologie Applicata, 2003. (193)

Čermák J. and Nadezhdina N. **2000**. Minimizing errors when up-scaling sap flow from sensors to the whole tree level based on measurement the radial pattern of flow. In: 5th International Workshop on Plant water relations and sap flux measurements. Firenze, Italy, 9-10 Nov.2000. (192)

Tognetti R. Raschi A. Nadezhdina N. and Čermak J. **2000**. Stand structure and foliage distribution patterns in individual trees of *Quercus pubescens* and *Quercus cerris* forests in Tuscany (central Italy). In: 5th International Workshop on Measuring Sap Flow in Intact Plants, 1-27pp. Tognetti,R. and Raschi A. (eds.), Firenze, Italy, 9-10 Nov.2000. Fondazione per la Meteorologie Applicata, 2003. (191)

Ulrich R. Nadezhdina N. Čermák J. Neruda J. **2000**: Roots under the impact of logging and hauling machinery. Application of new field techniques. In: Division 3, Forest Operations and Technique, XXI IUFRO World Congress "Forest and Society: The Role of Research" 7-12 August 2000, Kuala Lumpur, Malaysia. (poster)

Čermák J., Jimenez M.S., Gonzalez-Rodriguez A.M. and Morales D. **2000**. Laurel forests in Tenerife, Canary Islands: efficiency of water conducting systems in *Laurus azorica* trees. Trees 16: 538-546. (190)

Morales D., Jimenez M.S., Gonzalez-Rodriguez A.M. and Čermák J. **2000**. Laurel forests in Tenerife, Canary Islands: vessel distribution in stems and petioles of *Laurus azorica* trees. Trees 16: 529-53 (189)

Jimenez M.S., Nadezhdina N., Čermák J., Morales D. (**2000**): Radial variation in sap flow rate in five laurel forest tree species in Tenerife, Canary Islands. Tree Physiology 20(17): 1149-1156. (188)

Nadezhdina N. **2000**. Specificity of sap flow index for mist irrigation control. In: Proc.3rd Internat.Symp. on Irrigation of Horticultural Crops. M.I.Ferreira, (ed.) Estoril (Lisbon), Portugal, 28.June-2.July 1999. (pp.479-486), ISA, UTL Lisbon. Acta Horticulturae 537, October 2000. (187)

Čermák J. and Nadezhdina N. **2000**. Some new methods for studies of root structure and physiology in large trees (in Czech). In: Proc."Elektrina a lesní stromy", Faculty of Nat.History & Pedagog.Faculty, Ostrava Univ., Ostrava, Czech Rep. 5-13 pp., October 11, 2000. (186)

Aubrecht L., Čermák J., Koller J. and Stanek Z. **2000**. “Electrical methods for sapwood measurements” (in Czech). In: Proc."Elektrina a lesní stromy", Faculty of Nat.History & Pedagog.Faculty, Ostrava Univ., Ostrava, Czech Rep. 14-21 pp., October 11, 2000. (185)

Aubrecht L. Čermák J. Koller J. Ploček J. and Stanek Z. **2000**. “Temperature, voltage and frequency dependence of live woody tissue resistivity” (in Czech). In: Proc."Elektrina a lesní stromy", Faculty of Nat.History & Pedagog.Faculty, Ostrava Univ., Ostrava, Czech Rep. 22-28 pp., October 11, 2000. (184)

Nadezhdina N. Čermák J. Ceulemans R. **2000**. Water consumption in the main canopy and in understorey species as a parameter for functional evaluation of pine forests. In: Conf. "Forest ecosystems under changing growing conditions", Beskydy-Ostravice, Czech Rep., Oct.9-12, 2000. (183)

Tatarinov F. Kravka M. Krejzar T. Nadezhdina N. Čermák J. **2000**. Transpiration of dominant tree species in the floodplain forest as an objective criteria of its water management function. In: Conf. "Forest ecosystems under changing growing conditions", Beskydy-Ostravice, Czech Rep. Oct.9-12, 2000. (182)

Čermák J. and Nadezhdina N. **2000**. Water relations in mixed versus pure stand. In: Proc. of the International Conference, H.Hasenauer (ed.): Forest Ecosystem Restoration (Ecological and Economical Impacts of Restoration Processes in Secondary Conferous Forests), pp.70-76, Vienna, Austria, 10-12. April, 2000. (181)

Stokes A. Berthier S. Nadezhdina N. Čermák J. Loustau D. **2000**. Sap flow in trees in influenced by stem movement. (pp.272-277), Proc. 3rd Plant Biomechanics Conf., H.Ch.Spatz and T.Speck (eds.), Freiburg-Badenweiler, Aug.27-Sept.2 2000. Georg Thieme Verlag Stuttgart, New York. (180)

Tatarinov F. Čermák J. Kučera.J. Prax,A. **2000**. Transpiration of spruce in a mature plantation in Drahanska Vrchovina uplands, Moravia. I.Variation between individual trees.Ekologia (Bratislava),Vol.19,Suppl.1:48-62.

 (179)

Čermák J. Hruška J. Martinková M. Prax A. **2000**. Urban tree root systems and their survival near houses analyzed using ground penetrating radar and sap flow techniques. Plant and Soil 219 (1-2): 103-115. (178)

Nadezhdina N. and Čermák J. **2000**. Changes in sap flow rate in tree trunks and roots after mechanical damage. pp.167-175. In: Proc.Int.Conf., Spruce Monocultures in Central Europe - Problems and Prospects. (Klimo,E., Hager,H. and Kulhavý,J. (eds.). 22-25 June, 1998. EFI Proceedings No.33: 167-175, 2000. (177)

Tatarinov F. Kučera J. and Čermák J. **2000**. Transpiration of spruce monoculture in Rajec (southern Moravia) free of drought stress. pp.199-202, In: Proc.Int.Conf., Spruce Monocultures in Central Europe - Problems and Prospects. (Klimo E. Hager H. and Kulhavý J. (eds.). 22-25 June, 1998. EFI Proceedings No.33: 199-202, 2000.

 (176)

Čermák J. Nadezhdina N. Jimenez M.S. and Morales D. (**1999**): Radial patterns of sap flow in some Mediterraen fruit trees and its importance for scaling. In: 3rd Internat. Symp. on Irrigation of Horticult. Crops, p.77, Estoril, Portugal. (175)

Meiresonne L. Nadezhdina N. Čermák J. VanSlycken J. Ceulemans R. **1999**. Transpiration of a poplar stand: model calibration and validation by soil water and sap flow measurements. In: "Modeling of transport processes in soils at various scales in time and space". p.1-10, International Workshop of EurAgEng's Field of Interest on Soil and Water, Feyen,J. and Wiyo,K. (eds.). 24-26 Nov.1999, Leuven, Belgium. (174)

Janssens I.A. Sampson D.A. Čermák J. Meiresonne L. Riguzzi F. Overloop S. Ceulemans R. **1999**. Above- and belowground phytomass and carbon storage in a Belgian Scots pine stand. Ann.For.Sci. 56:81-90. (173)

Bauerle WL. Hinckley TM. Čermák J. Kučera J. Bible K. **1999**. The canopy water relations of old-growth Douglas-fir trees. Trees 13: 211-217. (172)

Nadezhdina N. **1999**. Sap flow index as an indicator of plant water status. Tree Physiology 19: 885-891. (171)

Nadezhdina N. and Čermák J. **1999**. Responses of sap flow rate along tree stem and coarse root radii to changes of water supply. Plant and Soil 12:1-12. (In: Proc. The Supporting Roots of Trees and Woody Plants: Form, Function and Physiology, A.Stokes, ed., pp.227-238, Klouwen Acad.Publ., Dordrecht-Boston-London, 430 p.).

 (170)

Nadezhdina N. **1999**. Woody plant behavior and stress assessment based on sap flow measurement. Application in forestry and horticulture. Assoc.Prof.Thesis at the Mendel University of Agric.and Forestry in Brno, Czech Rep., 118p. (169)

Jimenez MS. Morales D. Kucera J. and Čermák J. **1999**. The annual course of transpiration in a laurel forest of Tenerife. Estimation with Myrica faya. Phyton 39(4): 85-90. (168)

Kravka M. Krejzar T. and Čermák J. **1999**. Water content in stem wood of large pine and spruce trees in natural forests in central Sweden. Agricultural and Forest Meteorology 98-99: 555-562. (167)

Hruška J. Čermák J. Šustek S. **1999**. Mapping of tree root systems by means of the ground penetrating radar. Tree Physiology 19: 125-130. (166)

Čermák J. **1999**. Vertical distribution of foliage in Moravian floodplain forests. Ekologia (Bratisl.), Sup. 1999, Vol.18: 15-24. (165)

Tatarinov F. Čermák J. **1999**. Daily and seasonal variation of stem radius in oak. Ann.Sci.For. 56: 579-590.

 (164)

Meiresonne L. Nadezhdina N. Čermák J. Van Slycken J. Ceulemans R. **1999**. Transpiration of a monoclonal poplar stand in Flanders (Belgium). Agricultural and Forest Meteorology 96: 165-179. (163)

Šustek S. Druckmuller F. **1999**. "Application of image analysis for selection of planting material in forestry" (in Czech). Lesnictví-Forestry 45(1): 48-50. (162)

Šustek S. Hruška J. Druckmuller M. Michalek T. **1999**. "Root surfaces in the large oak tree estimated by image analysis of the map obtained by the ground penetrating radar"(in Czech). Lesnictvi-Forestry 45(3):139-143.(161)

Čermák J. **1999**. "Transpiration of forest stands and its dynamics under variable conditions" (in Czech). p. 27-34, In: Proc.Nat.Conf. "Strom pro život - život pro strom II", Melník, Czech.Rep., Aug.18-20,1999.

Čermák J. and Nadezhdina N. **1998**. Brief review of present techniques used for sap flow measurements in intact plants. Proc. 4th. International Workshop on Measuring Sap Flow in Intact Plants. Židlochovice, Czech Republic, Oct.3-5,1998. 4-11 pp. IUFRO Publications. Publishing house of Mendel Univ.Brno. (160)

Nadezhdina N. **1998**. Temperature gradients around a linear heater due to moving sap. Proc. 4th. International Workshop on Measuring Sap Flow in Intact Plants. Židlochovice, Czech Republic, Oct.3-5, 1998. 65-71 pp. IUFRO Publications. Publishing house of Mendel Univ.Brno. (159)

Nadezhdina N. Čermák J. Nadezhdin V. **1998**. Heat field deformation method for sap flow measurements. Proc. 4th. International Workshop on Measuring Sap Flow in Intact Plants. Židlochovice, Czech Republic, Oct.3-5, 1998. 72-92 pp. IUFRO Publications. Publishing house of Mendel Univ.Brno. (158)

Čermák J. Nadezhdina N. Raschi A. Tognetti R. **1998**. Sap flow in Quercus pubescens and Q.cerris stands in Italy. Proc. 4th. International Workshop on Measuring Sap Flow in Intact Plants. Židlochovice, Czech Republic, Oct.3-5, 1998. 134-141 pp. IUFRO Publications. Publishing house of Mendel Univ.Brno. (157)

Čermák J. and Nadezhdina N. **1998**. Radial profile of sap flow and scaling from the measuring point to the whole tree level. Proc. 4th. International Workshop on Measuring Sap Flow in Intact Plants. Židlochovice, Czech Republic, Oct.3-5, 1998. Abstr.142 p. IUFRO Publications. Publishing house of Mendel Univ.Brno.

 (156)

Čermák J. Hruška J. Martinková M. **1998**. Skeleton roots of large trees growing in the city analyzed by the ground penetrating radar technique and related to whole tree sap flow. (p.23) In: Proc.Internat.Symposium "The supporting roots -structure and function" (A.Stokes, ed.), Bordeaux, France, 20-24 July 1998. (155)

Nadezhdina N. Čermák J. **1998**. Response of sap flow rate along tree stem and coarse root radii to changes of water supply. (p.81) In: Proc.Internat.Symp. "The supporting roots - structure and function" (A.Stokes, ed.), Bordeaux, France, 20-24 July 1998. (154)

Nadezhdina N. and Čermák J. **1998**. Responses of sap flow in spruce roots to mechanical injury. (p.51) In: Proc.Int.workshop EFI, MUAF na IUFRO "Spruce Monocultures in Central Europe: Problems and Prospects". Brno 22-25.June 1998. (153)

Krejzar T. Kravka M. Čermák J. **1998**. Responses of stem growth to water consumption in mature spruce (*Picea abies* (L.) Karst.) trees. (p.47) In: Proc.International workshop European Forest Institute, Mendel University of Agriculture and Forestry and IUFRO "Spruce Monocult. in Central Europe: Problems and Prospects". Brno 22-25. June 1998. (152)

Nadezhdina N. Nadezhdin V. Čermák J. **1998**. Start of sap flow in several tree species during early spring. Conf."Forest and Water", Cracow, May 25-29. (poster)

Nadezhdina N. **1998**. Sap flow index as an indicator of plant water status. Conf."Forest and Water", Cracow, May 25-29. (poster)

Nadezhdina N. and Čermák J. **1998**. "The technique and instrumentation for estimation the sap flow rate in plants". Patent No.286438 (PV-1587-98). (151)

Krejzar T. and Kravka M. **1998**. Sap flow and vessel distribution in annual rings and petioles of large oaks. Lesnictvi-Forestry 44(5): 193-201. (150)

Čermák J. and Nadezhdina N. **1998**. Sapwood as the scaling parameter - defining according to xylem water content or radial pattern of sap flow? Ann.Sci.For.55: 509-521. (149)

Čermák J. Riguzzi F. and Ceulemns R. **1998**. Scaling up from the individual trees to the stand level in Scots pine: 1. Needle distribution, overall crown and root geometry. Ann.Sci.For.55: 63-88. (148)

Raschi A. Čermák J. Nadezhdina N. Tognetti R. **1998**. Water consumption in two oak species (*Q.pubescens* and *Q.cerris*) in central Tuscany. Euroflux Symposium, Italy, Jan.28-30. (poster)

Čermák J. **1998**. Leaf distribution in large trees and stands of the floodplain forests in southern Moravia. Tree Physiol. 18:727-737. (147)

Kostner B. Granier A. Čermák J. **1998**. Sap flow measurements in forest stands-methods and uncertainties. Ann.Sci.For. 55: 13-27. (146)

Nadezhdina N. Čermák J. **1997**. Automatic control unit for irrigation systems based on sensing the plant water status. An.Inst.Sup.Agronom., 46: 149-157. (145)

Cienciala E. Kucera J. Lindroth A. Čermák J. Grelle A. Halldin S. **1997**. Canopy transpiration from a boreal forest in Sweden during a dry year. Agricultural and Forest Meteorology 86: 157-167. (144)

Čermák J. Hruška J. **1997**. Three-dimensional studies of deep roots of large trees using the ground penetrating radar. In: First Biennial North American Forest Ecology Workshop "Understanding change in managed and unmanaged forests". McKimmons Center, North Carolina, June 24-26 1997. Pap.62. (143)

Čermák J. **1997**. Leaf distribution in oak, ash and lime trees and their irradiation as a background for scaling. In: European Geophysical Society XXII General Assembly, Vienna, Austria, 21-25. April 1997. Pap.62. (142)

Nadezhdina N. Tatarinov F. Ceulemans R. **1997**. Leaf area distribution and crown structure *Rhododendron* understorey in a coniferous forest: Description and scaling-up. In: European Geophysical Society XXII General Assembly, Vienna, Austria, 21-25. April 1997. (141)

Tatarinov F. Nadezhdina N. Ceulemans R. **1997**. Leaf area and crown architecture of understorey *Prunus serotina* in a Scots pine forest: A scaling-up excercise. In: European Geophys. Society XXII General Assembly, Vienna, Austria, 21-25. April 1997. (140)

Krejzar T. Kravka M. Tatarinov F. Šustek S. and Čermák J. **1997**. Estimation of enveloping surfaces of root systems in large trees in floodplain forests using the image analysis system. In: European Geophysical Society XXII General Assembly, Vienna, Austria, 21-25. April 1997. (139)

Martin TA. Brown K. Čermák J. Ceulemans R. Kucera J. Meinzer R. Rombolt J. Sprugel D. and Hinckley TM. **1997**. Crown conductance and tree and stand transpiration in a second-growth *Abies amabilis* forest. Can. J. For. Res. 27(6): 797-808. (138)

Kravka M. Čermák J. and Krejzar T. **1996**. Impact of past hydrotechnical measures against large floods and recent trends of revitalization in the water regime of floodplain forest ecosystems in southern Moravia, Czech Republic. In: Climate Change Impacts on Agriculture and Forestry, 12p., Volterra, Italy, March 13-23. 1996.

 (137)

Staněk Z., Čermák J., Aubrecht L. and Koler J. 1997. Electrical methods for recording longterm responses of woody species of polluted environments. In: Workshop 97, Preservation and creation of the environment. 1295-1296 pp. (enlarg.abstract)

Edwards WRN. Becker P.and Čermák J.**1996**. A unified nomenclature for sap flow measurements. Tree Physiology 17: 65-67. (136)

Čermák J. **1996**. "Transpiration of forest stands shown on the example of spruce plantation and floodplain forest in southern Moravia" (in Czech). In: Soucasné problémy lesnické hydrologie, M.Kravka (ed.), 83-91pp, Sept.26-27, 1996. Mendel Univ.Brno. (135)

Staněk Z. Čermák J. Koller J. Aubrecht L. Balek R. **1996**. "Monitoring of air pollution through trees" (in Czech), p.326-334. International Conf. "Environm. Impact Assessment" Prague, Sept.23-26,1996. CTU Prague, Czech Rep. (134)

Čermák J. **1996**. Scaling transpiration between trees and forest stands using biometric parameters available on large scale basis (p.11), In:Proc."3rd Workshop on Measuring Sap Flow in Trees" M.Cohen (ed.), Sitges (Barcelona)-Spain, 10-11.Oct.1996. (133)

Morales D. Gonzalez-Rodriguez AM. Čermák J. & Jimenez MS. **1996**. Laurel forests in Tenerife, Canary Islands: The vertical profiles of leaf characteristics. Phyton (Horn, Austria) 36(2):1-13. (132)

Jimenez MS. Čermák J. Kučera J. Morales D. **1996**. Laurel forests in Tenerife, Canary Islands: The annual course of sap flow in Laurus trees and stand. J.of Hydrology 183(3-4): 305-319. (131)

Morales D. Jimenez M.S. Gonzalez-Rodriguez A.M. and Čermák J. **1996**. Laurel forests in Tenerife, Canary Islands: I. The site stand structure and leaf distribution. Trees 11: 34-40. (130)

Morales D. Jimenez M.S. Gonzalez-Rodriguez A.M. and Čermák J. **1996**. Laurel forests in Tenerife, Canary Islands: II. Leaf distribution patterns in individual trees. Trees 11: 41-46. (129)

Jimenez M.S., Čermák J. Kučera J. Morales D. **1996**. Annual course of transpiration in a laurel forests of Tenerife. I. Estimation with *Laurus azorica.* Abstract p.145 in proc: II Symposium “Fauna and Flora of the Atlantic Islands”, Univ Las Palmas de Gran Canaria, 12-16. Feb. 1996. (poster)

Čermák J. **1995**. Automatic measurement of transpiration in forest stands and its changes under unfavorable conditions.(19p.). In: Workshop "Zvelebení lesních ekosystémù",VÚLHM-SB-NLK, Opocno,5-9.11.1995. (128)

Čermák J. **1995**. "Long-term monitoring of transpiration in floodplain forests in southern Moravia" (in Czech, English abstract) In:Workshop "Zvelebení lesních ekosystémù",VÚLHM-SB-NLK, Opocno,5-9.11.1995. (127)

Čermák J. **1995**. "Water consumption by floodplain forests in southern Moravia, its changes due to decreasing underground water table and possibilities of its systematic inspection" (in Czech). In: Proc. "Ochrana lužních lesù jižní Moravy - specifika lesního hospodárstvi". Židlochovice-zámek, April.6-7,1995. MZCR Praha, LCR and CVVS Czech Republic and EFI Joensuu, Finland. 100-114pp. Prague. (126)

Čermák J. **1996**. Direct measurement of transpiration in forest stands and its dynamics under contrasting environmental conditions. In: Proc. Climate Variability and Climate Change, Vulnerability and Adaptation. Nemešová,I. (ed.), 171-186pp. Prague (Milešovka), Czech Rep., Sept.11-15, 1995. (125)

Čermák J. **1995**. Methods for studies of water transport in trees, especially the stem heat balance and scaling. In: Proc. 32th Course in Applied Ecology, San Vito di Cadore, University of Padova, Italy, Sept.4-8, 1995. (124)

Čermák J. **1995**. Transpiration of trees - variability, relation to structures, water balance and defense mechanisms. In: Proc. 32th Course in Applied Ecology, San Vito di Cadore, University of Padova, Italy, Sept.4-8, 1995. (123)

Jimenez MS. Čermák J. Kučera J. Morales D. **1995**. Curso anual de transpiracion en un bosque de Laurisilva Canaria. I. Estimacion con Laurus azorica, p.43. In: IV.Congress "Luso-Espanol" of Plant Physiology, Lisbon, Oct.1995. (122)

Kravka M. and Čermák J. **1995**. Water storage in stem wood of large pine and spruce trees in central Sweden natural forests. European Geophysical Society, Proc.XX General Assembly, Annales Geophysicae, Part II, Oceans, Atmosphere,Hydrology&Nonlinear Geophysics,Suppl.IItoVol13,p.C-504,Hamburg,Germany,Apr.3-7,1995. (121)

Čermák J. Bednárová E. Kučera J. Cienciala E. Lindroth A. **1995**. Variation of transpiration in large trees of sub-boreal forest under drought. European Geophysical Society, Proc.XX General Assembly, Ann. Geophys, Part II, Oceans, Atmosp., Hydrol. & Nonlin. Geophys, Suppl.II,Vol.13,C-502,Hamburg,Germany,April 3-7,1995.

 (120)

Čermák J. **1995**. "Changes of transpiration in floodplain forest, Lednice (southern Moravia) in the course of ten years after water management measures" (in Czech). In: Proc."Ekologická stabilita lesù" (11p.), Nov.15-16,1994, Olomouc, Czech Rep. (119)

Čermák J. Cienciala E. Kučera J. Lindroth A. Bednárová E. **1995**. Individual variation of sap flow rate in large pine and spruce trees and stand transpiration: A pilot study at the central NOPEX site. J.of Hydrol.168:17

 (118)

Lindroth A. Čermák J. Kučera J. Cienciala E. Eckersten H. **1995**. Sap flow by heat balance method applied to small size *Salix*-trees in a short-rotation forest. Biomass and Bioenergy, Elsevier Sci.,Ltd. Vol.8,No.1:7-15.

 (117)

Čermák J. **1995**. Simple analysis of tree transpiration in relation to crown and stand structure. IUFRO workshop "Interactive environmental effects on forest stands", D. Whitehead and D. Crabb (eds.), N.Zealand, Jan.29-Feb.7, 1995, Lincoln Univ.Christchurch. (116)

Martin TA. Hinckley TM. Sprugel DG. Meinzer FC. Čermák J. and Kučera J. **1995**. Comparative shoot-, branch-and crown-level physiology in stands of Pacific silver fir (Abies amabilis). In: Proc.IUFRO workshop "Interactive environmental effects on forest stands", D. Whitehead and D. Crabb (eds.), p.118. N.Zealand, Jan.29-Feb.7, 1995, Lincoln Univ.Christchurch. (115)

Sprugel DG. Brook JR. Brown KJ. Čermák J. Ceulemans R. Kučera J. Martin TA. Meinzer FC. Rombold J. and Hinckley TM. **1995**. Abies amabilis canopies: Role of light in leaf morphology, foliage distribution and canopy processes. In: Proc.IUFRO workshop "Interactive environmental effects on forest stands", D.Whitehead and D.Crabb (eds.), p.165. N.Zealand, Jan.29-Feb.7, 1995, Lincoln Univ. Christchurch. (114)

Pallardy SG. Čermák J. Ewers FW. Kaufmann MR. Parker WC. and Sperry JS. **1995**. Water transport dynamics in trees and stands. In: Smith PG. and Hinckley TM. (eds.): Resource Physiology of Conifers - Acquisition, Allocation and Utilization, p.301-389. Acad.Press. San Diego, N.York, Boston, London, Sydney, Tokyo, Toronto. (113)

Cienciala E. Lindroth A. Čermák J. Hallgren J-E. and Kučera J. **1994**. The effect of water availability on transpiration, water potential and growth of *Picea abies* during a growing season. J.of Hydrology 155:57-71.

 (112)

Čermák J. **1994**. Variation of sap flow and transpiration in trees and stands. In: II. Curso de Ecofisiologia Vegetal, 17-19th Oct.1994, (10p.), La Laguna, Tenerife, Islas Canarias, Spain. (111)

Čermák J. and Kučera J. **1994**. Transpiration of trees and forest inventory parameters - a background for applied studies. In: Vancura K. and Šrámek V. (eds.), Effect of Global Climatic Change on Boreal and Temperate Forests. p.142-147. Oct.10-14, 1994. Forestry and Game Manag. Res. Inst., Jilovište-Strnady, Czech Republic.

 (110)

Čermák J. **1994**. Individual variation of sap flow rates in large forest trees on different sites under contrasting soil water. In: 2nd workshop on measuring sap flow in intact plants (p.15). Braun,P.(ed.), Oct.11-12.1994, Bonn, Germany. (109)

Čermák J. **1994**. Medio del flujo de agua po el xilema en los arboles. In: D.Morales (ed.): Tendencias en ecofysiologia vegetal (p.109-117), Univ.de La Laguna,Oct.1993, La Laguna,Tenerife,Islas Canarias, Spain.(108)

Hinckley T.M.. Brooks J.R.. Čermák J. Ceulemans R. Kučera J. Meinzer F.C. and Roberts D.A.. **1993**. Water flux in a hybrid poplar stand. Tree Physiology 14: 1005-1018. (107)

Čermák J. Matyssek R. Kučera J. **1993**. Rapid response of large, drought stressed beech trees to irrigation. Tree Physiology, 12: 281-290. (106)

Deml M. Kučera J. Čermák J. **1993**. "Measurement of the xylem water flow in trees with the method of trunk heat balance" (in Czech). Proc.Symp.Nat.Com.IMECO,"Flow'93",Prague, May.'93,p.31-40,Tech-Market,Prague.

 (105)

Čermák J. Matyssek R. Kučera J. **1993**. "The causes of beech decline on heavy soils after sudden reduction of stand density" (in Czech). Lesnictví-Forestry 39(5): 175-183. (104)

Čermák J. Kučera J. Janíček R. **1992**. The "Roof" project in Rajec. In: Proc. Experimental manipulations of Ecosystems: Symposium in Copenhagen, May 18-20,1992. (7 p.). (103)

Cienciala E. Lindroth A. Čermák J. Hallgren J-E. Kučera J. **1992**. Assessment of transpiration estimates for *Picea abies* trees during a growing season. Trees 6: 121-127. (102)

Čermák J. Cienciala E. Kučera J. Lindroth A. Hallgren J-E. **1992**. Radial velocity profiles of water flow in stems of spruce and oak and response of spruce tree to severing. Tree Physiology 10: 367-380. (101)

Čermák J. **1991**. "Transpiration of trees and its significance in forest ecology" (in Czech). Assoc. Prof. Habilitation Thesis, (a review of author's papers), Agr.Univ.Brno 95p. (100)

Čermák J. and Kučera J. **1991**. Stem heat balance method of measuring the sap flow rate and transpiration in large trees and its practical application. In: 83th Annual Meeting of the American Society of Agronomy, Division A-3 Agroclimatology and Agronomic Modeling, Symposium on Sap Flow Measurements p.5-6, Denver, Colorado, Oct.27-Nov.21,1991. (99)

Matyssek R. Čermák J. Kučera J. **1991**. Ursacheneingrenzung eines lokalen Buchensterbens mit einer Messmethode der Kronentranspiration. Schweiz. Z. Forstwes. 142(10): 809-828. (98)

Čermák J. Michálek J. **1991**. "Selection of sample trees in forest stands using the "quantils of total" (in Czech). Lesnictvi (Forestry) 37(1): 49-60. (97)

Čermák J. Kučera J. Štepánková M. **1991**. Water consumption of full-grown oak (*Quercus robur* L.) in a floodplain forest after the cessation of flooding. In: "Floodplain forest ecosystem II", Penka M. Vyskot M. Klimo E. Vašícek F. (eds.), p.397-417, Elsevier (Developm. in Agricult.& Managed Forest Ecology 15B), Amsterdam-Oxford-N.York-Tokyo. (96)

Heimann J. Čermák J. Kučera J. Gruber F. **1991**. "Measurements of the sap flow rate in spruce in Langen Bramke, Harz (in German). (p.196-200). In: Berichte des Forschungszentrums Waldekosysteme, Reihe B, Bd.22. Beitrage zur Tagung der Okosystem Forschungszentren in Gottingen vom 24.-26.10.1990. (95)

Čermák J. Kučera J. **1991**. Extremely fast changes of xylem water flow rate in mature trees, caused by atmospheric, soil and mechanical factors. 181-190pp. In: Proc.CEC International Workshop "Methodologies to assess the impacts of climatic changes on vegetation: Analysis of water transport in plants and cavitation of xylem transport in plants and cavitation of xylem conduits". Raschi A. Borghetti M. (eds.), May 29-31.1991. Firenze, Italy. (94)

Čermák J. Kucera J. **1990**. Water uptake in healthy and ill trees under drought and hypoxia and non-invasive assessment of the effective size of root systems. (p. 185-195) In: Proc. COST 612 Workshop "Above and belowground interactions in forest trees in acidified soils" Persson H. (ed.), Simlangsdalen, May 21-23.1990, Sweden. (93)

Čermák J.Kučera J.**1990**. Scaling up transpiration data between trees, stands and watersheds. Silva Carelica 15:101-120. (92)

Čermák J. Kučera J. **1990**. "Transpiration, its limiting factors and hydrologically important biometric parameters of forest tree species" (in Czech). In: Proc." Československý príspevek do MHP-UNESCO 1985-89", 10p, Modra u Bratislavy, CSFR, Sept.11-13.1989. (91)

Čermák J. Kučera J. **1990**. Changes in transpiration of healthy mature trees due to environmental conditions and of those with damaged water conductive system. In: Proc. Cs.MAB Natl.Comm./IUFRO Internat. Workshop "Verification of hypotheses and possibilities of recovery of forest ecosystems", Klimo E. Materna J. (eds.), p.275-286, Beskydy Mt., Czechoslovakia, Sep.4-8, 1989. Agr.Univ.Brno. (90)

Čermák J., Janíček R., Tesar V., Oszlányi J. **1990**. “Estimation of needle distribution in crowns of large trees” (in Czech). Agr. Univ. Brno, 30p. (89)

Kučera J. Čermák J. **1989**. Diurnal dynamics of the transpiration flow in fully grown oak (*Quercus robur* L.) as related to main meteorological factors. In: Tagungsbericht 2. Symposium "Ausgewählte probleme der Gehölzphysiologie-Gehölze, Mikroorganis. und Umwelt". p.104, Tesche M. Michael G. Feiler S. (eds.). Tharandt, 13-16 June 1989, Germany. (88)

Čermák J. **1989**. "A practical functional parameter of assimilating organs of trees and forest stands - solar equivalent leaf area" (in Czech). Lesnictvi-Forestry 35(8): 695-707. (87)

Čermák J. **1989**. Solar equivalent leaf area as the efficient biometric parameter of individual leaves, trees and stands. Tree Physiology 5: 269-289. (86)

Čermák J. **1988**. Solar equivalent leaf area as the parameter suitable to convert transpiration data between individual leaves, trees and stands. In: Proc. Internat. Symp. on Forest Tree Physiology IUFRO (21.C2), Nancy, France. (85)

Čermák J. Kučera J. Štepánková M. **1987**. "Water consumption of fully grown oak in floodplain forest during transient period after cessation of floods" (in Czech). Acta Univ. Agric. (Brno),Ser.C,56(1-4):5-25. (84)

Čermák J. and Kučera J. **1987**. Transpiration of fully grown trees and stands of spruce (*Picea abies* (L.) Karst.) estimated by the tree-trunk heat balance method. In: Proc. Forest Hydrology and Watershed Measurements, Vancouver, Canada Aug.1987, Swanson RH. Bernier PY. and Woodward PD. (eds.). Publ.No.167, IAHS-AISH, Wallingford, UK, 311-317pp. (83)

Čermák J. **1986**. Short- and long-term response of transpiration flow rate in full-grown trees to water stress. In: Proc. l8th IUFRO World Congress, Whole-Plant Physiology Working Party (S 2.01-15) 7-21.Sept 1986, Ljubljana, Yugoslavia, Yugoslav IUFRO World Congress Organiz. Committee (ed.), Plesko Ljubljana pp.187-193. (82)

Balek J. Čermák J. Kučera J. Prax A. Palouš M. **1986**. Regional transpiration assessment by remote sensing. In: Proc. Cocoa Beech Workshop, "Hydrological application of space technology" Florida, August 1985. IAHS Publ. No.160: 141-148. (81)

Čermák J. Prax A. Kučera J. **1986**. "Ecological conditions of permanent coexistence of fully grown trees and constructions in housing developments" (in Czech). In: Proc."Zakladani (staveb) na objemovì nestálých zeminách se zohlednenim vlivu vegetace" (p.31-78), Dum techniky CSVTS Brno. (80)

Čermák J. Kučera J. Prax A. Balek J. **1986**. Method of direct transpiration measurements in trees and water consumption of forest ecosystems on various soils. In:Proc.19-th L.A.H.Congress,Karlovy Vary (CSFR). (79)

Čermák J. Kučera J. Prax A. Balek J. **1986**. "Transpiration and water regime of the pine stand in the sand-rock region of poor pine forests" (in Czech). In:Proc.Symp.VSZ v Brne "Funkce lesù v životním prostredi"(p.67-73), Brno. (78)

Balek J. Čermák J. Kucera J. Palouš M. Prax A. **1985**. Remote sensing measurements of regional transpiration distribution as an input for the deterministic water balance simulation. In: Proc. 4-th Internat.Hydrology Symposium on Multivriate Analysis of Hydrological Processes. (p.1-4), Colorado State Univ., USA. (77)

Balek J. Čermák J. Kučera J. Palouš M. Prax A. **1985**. Assessment of regional transpiration by remote sensing. In: Seminar on Remote Sensing Applications in Hydrology and Water Resources. (p.1-17), Bratislava. (76)

Balek J. Čermák J. Kučera J. Palouš M. Prax A. **1985**. "The possibilities to estimate transpiration by remote sensing" (in Czech.). Vodohospodarský casopis 33(5): 497-505. (75)

Schulze E-D. Čermák J. Matyssek R. Penka M. Zimermann R. Vašícek F. Gries W. and Kučera J. **1985**. Canopy transpiration and flow rate fluxes in the xylem of the trunk of *Larix* and *Picea* trees - a comparison of xylem flow, porometer and cuvette measurements. Oecologia (Berlin) 66: 475-483. (74)

Čermák J. Kučera J. Prax A. Štepánková M. **1985**. Transpiration der Fichte (*Picea abies* (L.) Karst.) unter Feuchtigkeitstress in Gebiet des Tharandter Waldes. In: Symp. "Ausgewählte Probleme der Gehölzphysiologie" (p.77-81), Tesche M. Feiler S. (eds.). Tech. Univ. Dresden, Tharandt. (73)

Tesche M. Bellmann Ch. Michael G. Schmidt P. Zentsch W. Čermák J. Kučera J. Prax A. **1984**. Ökomorphologische und ökophysiologische Studien an zwei 99-jahringen fichten im Tharandter Wald. Wiss. Zeitschr. Tech.Univ. Dresden 33(3):231-35. (72)

Čermák J. Penka M. Štepánek V. **1984**. Comparison of transpiration and transpiration flow. In: Vašícek F. (ed.): "Ecophysiological and ecomorphological studies of individual trees in the spruce ecosystems of the Drahanská vrchovina uplands (Czechoslovakia)". p.82-87. Folia Univ.Agric., Fac.Silv., A Brno. (71)

Čermák J., Penka M. and Kučera J. **1984**. Transpiration flow. In: Vašíček F. (ed.) "Ecophysiological and ecomorphological studies of individual trees in the spruce ecosystems of Drahanska vrchovina uplands (Czechoslovakia)". p.71-81. Folia Univ.Agric., Fac.Silv. A, Brno. (70)

Huzulák J. Štepánková M. **1984**. Water potential and saturation deficit of one-year shoots of Norway spruce. In: Vašícek F. (ed.): "Ecophysiological and ecomorphological studies of individual trees in the spruce ecosystems of the Drahanská vrchovina uplands (Czechoslovakia)". p.64-70. Folia Univ. Agric., Fac.Silv., A, Brno. (69)

Čermák J. Jeník J. Kučera J. Židek V. **1984**. Xylem water flow in a crack willow tree (*Salix fragilis* L.) in relation to diurnal changes of environment. Oecologia (Berlin) 64: 145-151. (68)

Čermák J. Deml M. Kučera J. **1984**. "The measurements of transpiration flow in fully grown trees by the method of heat balance" (in Czech). In: Proc. 2. celostatniho seminare "Skusenosti z automatizace merania (p.61-64), Ústav hydrologie a hydrauliky SAV, Bratislava. (67)

Čermák J. Kučera J. Židek V. Penka M. **1983**."Water relations of crack willow (*Salix fragilis* L.)in Mokré louky near Trebon" (in Czech).In:Jeník,J.KvìtJ.(eds):"Studia zaplavovanych ekosystemu u Trebone"(p.97-103), Studie CSAV 4, Academia Praha, 150p. (66)

Penka M. Čermák J. Prax A. Úlehla J. Židek V. **1983**. "Water consumption of oak (*Quercus robur* L.) in the alluvium of the Dyje river in non-limiting moisture conditions" (in Czech). Lesnictvi-Forestry 29(6):481-496.

 (65)

Čermák J. Kučera J. Simon J. Dušek V. **1983**. The electric conductance of seedlings stems and the water content of spruce and pine on course of desiccation. Biol. Plant. (Praha) 25(6): 468-471. (64)

Balek J. Čermák J. Kučera J. **1983**. A direct method for forest transpiration measurement. J.of Hydrol.66:123-131. (63)

Čermák J. Kučera J. **1983**. "Method of measurement of selected physiological parameters in full-grown trees" (in Czech). In: Proc. "Automatizace merania a vyhodnocovania hydro-meteorologickych udajov"(p.35-38). Ústav hydrol. a hydraul. SAV Bratislava. (62)

Simon J. Dušek V. Čermák J. Kučera J. **1982**. "Assessment of physiological quality of seedlings of woody species based on estimation of electrical admittance of their stems" (in Czech) In: Proc."Production of seedlings of woody species by vegetative technique", Workshop CSAZ, June 3-4.1982, LF-VSZ Brno. (61)

Čermák J. Úlehla J. Kučera J. Penka M. **1982**. Sap flow rate and transpiration dynamics in the full-grown oak (*Quercus robur* L.) in floodplain forest exposed to seasonal floods as related to potential evapotranspiration and tree dimensions. Biol. Plant. (Praha) 24(6): 446-460. (60)

Čermák J. Kučera J. **1981**. The compensation of natural temperature gradient in the measuring point during the sap flow rate determination in trees. Biol. Plant. (Praha) 23(6): 469-471. (59)

Čermák J. **1980**. "Water consumption dynamics in fully grown woody species" (in Czech). In: Proc.Celostatni konference CSVTS, "Zakládáni staveb" (p.136-144) Brno. (58)

Čermák J. Huzulák J. Penka M. **1980**. Water potential and sap flow rate in adult trees with moist and dry soil as used for the assessment of the root system depth. Biol.Plant. (Praha) 22: 34-41. (57)

Prax A. Čermák J. **1980**."Water balance of oak in a floodplain forest" (in Czech). In: Proc.3.sjezd SBS 239-244p. Zvolen. (56)

Čermák J. Kučera J. **1980**. "Seasonal course of the transpiration flow and water consumption in oak (*Quercus robur* L.) in a flood-plain forest"(in Czech).Proc.3.sjezdu SBS (p.233-8), Zvolen. (55)

Židek V. Čermák J. Ulehla J. **1980**. "Transpiration flow in oak in a floodplain forest in relation to potential evapotranspiration (in Czech). Proc.3.sjezdu SBS (p.227-32) Zvolen. (54)

Rychnovská M., Čermák J., Šmíd P. **1980**. Water output in a stand of *Phragmites communis* Trin. A comparison of three methods. Acta Scientia Naturalis (Brno) 14(2): 1-27. (53)

Balek J. Čermák J. Kučera J. Prax A. **1979**. "Estimation of transpiration as a part of water losses of hydrological balance using sap flow rate measurement in trees" (in Russ). Mezdunarodnyj sympozium KAPG: Isparenije vody v prirode i metody jejo issledovanija", Bratislava, brezen 1979. (52)

Penka M. Čermák J. Štepánek V. Palát M. **1979**. Diurnal courses of transpiration rate and transpiration flow rate as determined by the gravimetric and thermometric methods in a full-grown oak tree (*Quercus robur* L). Acta Univ. Agric. Brno, Ser C, 48 (1-4): 3-30. (51)

Čermák J. Kucera J. Prax A. Židek V. **1979**. "Water flow in the soil-plant-atmosphere continuum on the example of birch in a forest stand" (in Czech). In: Proc.Celostatni seminar VSP "Bilancia energie a vody v polnych a lesnich ekosystemoch" (p.135-149), VSP Nitra. (50)

Kučera J. **1977**. "A system for water flux measurements in plants" (in Czech). Patent (Certificate of authorship) CSFR No.185039 (P.V. 2651-1976). (49)

Penka M. Čermák J. **1978**. "Diurnal and seasonal courses of transpiration flow rate in birch (*Betula alba* L.) and oak (*Quercus sessilis* Ehrh.)" (in Czech). In: Proc. "Struktura, funkce a produktivita modelových lesních ekosystémù ovlivnovaných uvedomnelou anthropickou cinností (nížinné a pahorkatinné oblasti CSFR). p.55-71,UEL VSZ Brno. (48)

Úlehla J. Čermák J. **1977**. "Daily totals of transpiration flow in trunks of fully grown trees and potential evapotranspiration" (in Czech). In: Proc. Celoštatny dendrofyziologicky seminar UEBE-SAV "Fotosyntéza a vodný provoz drevín". Huzulák J. Masarovièová E. (eds.), p.55-62, Modra-Piesky. (47)

Čermák J. **1977**. "The course of transpiration flow rate in fully grown trees from viewpoint of different time periods" (in Czech). In: Proc. Celoštatny dendrofyziologický seminár UEBE-SAV "Fotosyntéza a vodný provoz drevín" Huzulák J. Masarovièová E. (eds.), (p.47-54), Modra-Piesky. (46)

Kučera J. Čermák J. Penka M. **1977**. "Reduction of the number of output variables when measuring the transpiration flow rate in plants" (in Czech). In: Proc.2.celostát. semináre "Automatizace sberu dat v ekologii, p.107-113, Liblice. (45)

Čermák J. Kučera J. Penka M. **1977**. "Continual measurements of transpiration flow rate with the method of heat balance" (in Czech). In: Proc. 2.celostat. seminare "Automatizace sberu dat v ekologii" (p.43-50), Liblice. (44)

Kučera J. Čermák J. Penka M. **1977**. Improved thermal method of continual recording the transpiration flow rate dynamics. Biol. Plant. (Praha) 19(6): 413-420. (43)

Penka M. Čermák J. Palát M. **1976**. Behavior of the transpiration flow rate and its variations due to weather conditions observed in full-grown tree of Prunus avium L.Acta Univ.Agric.(Brno),Ser.C,45(3-4):123-147. (42)

Čermák J. Palát M. Penka M. **1976**. Transpiration flow rate in fully-grown tree *Prunus avium* L. by heat balance method estimated, in connection with some meteorological factors. Biol. Plant. (Praha) 18(2): 111-118. (41)

Čermák J. Kučera J. Penka M. **1976**. Improvement of the method of sap flow rate determination in adult trees based on heat balance with direct electric heating of xylem. Biol. Plant. (Praha) 18(2): 105-110. (40)

Penka M. Čermák J. Štepánek V. **1975**. "Water relations and photo-synthesis of woody species"(in Czech). In: Proc.IBP LF-VSZ Brno: Funkce, produktivita a struktura ekosystemu luzniho lesa, p.41-59. (39)

Penka M. Čermák J. Deml M. Palát M. **1974**. Water transport estimates in adult trees based on measurements of heat transfer by mass flow. In: PT-PP/IBP Report No.4: 167-204. Univ.Agr., Fac.Forestry, Brno. (38)

Čermák J. Deml M. **1974**. "Method of water transport measurements in woody species, especially in adult trees" (in Czech). Patent (Certification of authorship) CSFR, No.155622 (P.V.5997-1972). (37)

Penka M. Čermák J. Deml M. **1973**. Water transport estimates in adult trees based on measurement of heat transfer by mass flow. Acta Univ.Agric.,(Brno), Ser.C, 42: 3-23. (36)

Čermák J. Deml M. Penka M. **1973**. A new method of sap flow rate determination in trees. Biol. Plant. (Praha) 15(3): 171-178. (35)

Čermák J. Deml M. Penka M. **1972**. "Suggestion of the method for estimation the water transport in large trees" (in Czech). In: Vedecka konference IBP, Vysoká škola zemedelská, Brno. (34)

Penka M. Štepánek V. Čermák J. **1972.** "Some results of the water regime in woody species" (in Czech). In: Vedecka konference IBP, Vysoká škola zemedelská Brno. (33)

Penka M. Štepánek V. Čermák J. (**1972**. A study of the water regime in oak (*Quercus robur* L.). Acta Univ.Agric. (Brno), Ser.C, 42: 121-137. (32)

 **2) OLEORESINS & ORGANIC VOLATILE SUBSTANCES**

Čermák J. and Urban J. **1995**. "Volatile organic substances released by forest trees - primary attraction and indication of stresses (in Czech, English abstract) In: Workshop "Zvelebení lesních ekosystémù", VÚLHM-SB-NLK, Opocno, 5-9.11.1995. (31)

Martinková M. Čermák J. **1994**. Physiological predisposition of forest woody species to an attack by phytophages and possibility of defense reactions. (in Czech). In: Proc.Nat.Conf."Bark-beetle calamity: causes, extent, defense." (25-37), Mendel Agricult. and Forestry Univ.Brno, Czech Rep., Feb.17,1994. (30)

Čermák J. Novák J. **1987**. Composition of organic volatile compounds in the atmosphere of forest ecosystems as studied by gas-chromatography. Ekologia (Bratislava) 6(3): 251-264. (29)

Čermák J. **1987**. Monoterpene hydrocarbon contents of the resin from seeds of silver fir (*Abies alba* Mill.). Trees 1:94-101. (28)

Čermák J. Novák J. **1986**. Estimation of volatile substances in the atmosphere of forest ecosystems by gas-chromatography. Journal of Environmental Analytical Chemistry 24: 1-22. (27)

Novák J. Čermák J. **1986**. "Arrangement for transferring substances from trapping columns into the gas-chromatograph" (in Czech). Chemicke listy 80: 651-654. (26)

Novák J. Čermák J. Necas M. **1985/89**: "System for transferring substances from trapping columns into the gas chromatograph" (in Czech). Patent (Certification of authorship) CSFR No.249044; PV.4072-1985. (25)

Čermák J. Novák J. **1985**. Composition of monoterpene hydrocarbon mixtures in liquid resins and in the air above them. Acta Univ.Agric. (Brno), Ser.C, 54(3-4): 327-342. (24)

Čermák J. Novák J. **1984**. "Estimation of volatile substances in the atmosphere of forest ecosystem by the gas-chromatography" (in Czech). In: 6-th National Conference "Chromatografické metody a ich význam pre zdravie cloveka", Stará Lesná, Tatry. (23)

Čermák J. Penka M. **1983**. "Biochemical analysis of resin of seeds in the research of individual variability in silver fir (*Abies alba* Mill.) trees" (in Czech). Lesnictvi 29(1): 65-72. (22)

Čermák J. **1982**. The utilization of ecophysiological knowledge to study forest ecosystems. (in Czech). Acta Ecologica Naturae et Regionis (p.13-14), Terplan Praha. (21)

Penka M. Čermák J. **1980**. The estimate potential production of volatile terpenes from the by-products of spruce (*Picea abies* (L.) Karst.) and pine (*Pinus sylvestris* L.) in Czechoslovakia. In: Proc.3 Int.Congress on Essential Oils, Cannes-grasse. (20)

Penka M. Čermák J. **1979**. An attempt to estimate potential production of volatile terpenes from the logging by-products of silver fir (*Abies alba* Mill.) in Czechoslovakia. Planta Medica 36(3): 252. (19)

Čermák J. Penka M. **1978**. Quantitative variation of monoterpene hydrocarbon composition in resin from *Abies alba* Mill. seeds during their long-term storage. Biologia (Bratislava) 33(7): 565-572. (18)

Čermák J. **1978**. Ecologically active volatile plant metabolites. (In Czech). In: Proc.Symp."Využitie a výskum fytoncídov v polno-hospodarstve lesnictve a potravinarstve" Zachar D. (ed.), p.161-171, VSZ Nitra. (17)

Čermák J. Penka M. Tesarík K. **1977**. Variations in terpene composition due to different techniques of sample treatment using as example the resin from seeds of *Abies alba* Mill. Acta Univ.Agric.(Brno),Ser.C,47(1-4):3-15.

 (16)

Penka M. Čermák J. Tesarík K. **1977**. Chromatographic determination of monoterpene hydrocarbons and alcohols contained in the resin from *Abies alba* Mill.seeds. Acta Univ.Agric.(Brno),Ser.C,46(1-4):147-169. (15)

Čermák J. **1976**. "Resin composition and its importance in forest tree species on the example of resin from seeds of *Abies alba* Mill" (in Czech). Univ.Agric.Brno, Diss. (394 pp.). (14)

Čermák J. **1976**. "A contribution to the complexity of knowledge of individual tree specimens" (in Czech). In: Proc.Pracovní skupiny ČSAZV pro lesnickou genetiku a šlechtení drevin. VUHL Zvolen (p.92-93). (13)

Čermák J. **1972**. Specification and a raw material characteristics for production of essential oils from needles. (in Czech). In: Proc. I. Mezinarodní konference "Problematika pøidružené lesní výroby", Vysoké Tatry. (12)

Čermák J. Hrivnác M. Penka M. **1969**. Some aspects in determining oleoresins and their use in forest husbandry. Acta Univ.Agric. (Brno), Ser.C, 38(4): 317-324. (11)

Čermák J. **1969**. "The importance of estimation of resins in forest woody species"(in Czech). In:Proc.LF VSZ Brno,13-16. (10)

Čermák J. Hrivnác M. Penka M. **1968**. Estimation of oleoresins in seeds of some *Abies* species. (No. 234) In: Proc. 4-th. Internat. Congr.on Essential Oils, Tbilisi. (9)

 **3) MISCELLANEOUS, POPULAR & TECHNICAL:**

Ulrich R., Čermák J., Cach A., Rybanský M. **2014**. Equipment for assuring of carriage-way through forest stands. Technical improvements.(in Czech: Užitný vzor No.26955, Bureau of Industrial Properties, Praha) 11pp.

Simon J., Buček A., Čermák J. **2011**. For evaluation of the state of rot and damage in tree base and roots (in Czech). Živa 6:270-271.

Simon J., Čermák J. **2011**. Assessment of rot in stem base and roots (in Czech). Lesnická práce 90(12):40/833-41/834.

Čermák J. **2011**. Šumavské smrčiny a kůrovec. Veronica XXV, roč.2011, č.5: 16-17.

Čermák J. Vygodskaya N. and Kaufmann MR. **1998**. Abstracts of book literature on forest biology and ecology published in East Euopean countries. Part 1: Former USSR and Czechoslovakia, 1965-1992. IUFRO Publications, Publ. House of Mendel Univ.of Agric.and Forestry, Brno, Czech Rep.,114 p. (8)

Čermák J. **1998**. "Water and forests in southern Moravia" (in Czech). Daphne (Bratislava) 5: 24-28.

Bednárová E. and Kucera J. **1992**. "Aplication of the aerodymanic method of CO2 measurement in a spruce forest" (in Czech). Lesnictvi (Forestry), 38(11): 899-907. (7)

Čermák J. Michálek J. **1991**. "Selection of sample trees in forest stands using "quantils of total" "(in Czech). Lesnictvi (Forestry) 37(1): 49-60. (6)

Bednárová E. Kučera J. **1985**. Aerodynamische Methode der Messung des CO2-Flusses am Bespiel der Ermittlung der Photosynthese eines Auerwaldes. In: Symp."Ausgewählte Probleme der Gehölzphysiologie" (p.82-86), Tesche M. Feiler S. (eds.), Tech. Univ.Dresden, Tharandt. (5)

Čermák J. **1984**. "A device for measurement the crown ground plan area in large trees" (in Czech). Technical improvements, ZN 9/84 Agr.Univ.Brno.

Šoch J. Čermák J. **1981**. "Stimulating the growth in height of spruce seedlings through a d.c. voltage gradient in the root zone" (in Czech). Acta Univ.Agric. (Brno), Ser.C, 50(1-4): 11-23 (4)

Simon J. Dušek V. Čermák J. Kučera J. **1981**. "Physiological quality of seedlings of woody species assessed from measurement of electric conductance of their stems"(in Czech). Technical improvement, ZN Sc-S1, Pr.Teplice, No.P14-18.

Čermák J. **1976**. "The use of the "fan-form card-index" (interconnected punch card system) as the key for determining the unknown taxonomic units" (in Czech). Zemedelská informatika (Metodicky zpravodaj UVTI) 15(4): 123-147.

Penka M. Čermák J. Štepánek V. **1974**. Contribution of the photosynthetic rate in oak (*Quercus robur* L.). PT-PP/IBP Report No.4 (205-228 pp), Univ. Agric.Fac. Forestry, Inst.IBP Brno. (3)

Penka M. Čermák J. Štepánek V. **1972**. Some results of the photosynthetic studies in forest woody species. (In Czech). In: Vedecká konference IBP, Vysoká škola zemedelská Brno. (2)

Penka M. Čermák J. Štepánek V. **1971**. Contribution to studies of the photosynthetic rate in oak (*Quercus robur* L.). Acta Univ.Agric. (Brno), Ser.C, 40: 283-301. (1)

##### R E S E A R C H R E P O R T S

Čermák J., Černý M., Šrámek M., Pokorný J., Vichrová G., Klewar M. **2015**. Makrostruktura, růst a vodní provoz smrku ztepilého (in Czech). Výzkumná zpráva Mendelovy Univ. v Brně, pro Národní park Šumava, 37p. (R-67).

Čermák J., Staněk Z. and Koller J. **2012**. Situation of the memorable Štikov lime (estimates of root system of a large solitary growing tree).. Report of Mendel Univ.Brno for Protected area Železné hory administration, Nasavrky, 10p. (R-66)

Čermák J. **2011**. Equipment for the mobile forest laboratory. Res.Rep. Fond rozvoje vysokých škol 3118-2011-A-a, Faculty of forestry, Mendel Univ. Brno 7p. (R-65)

Čermák J., Prax A., Pokorny J. Brom J. **2009**. Silver maple in the spa of Aurora, town of Třeboň. Research esreport of Mendel Univ.Brno and ENKI, o.p.s. Třeboň, for municipal authorities of the town of Třeboň. 1-19p.

 (R-64)

Čermák J., Naděždina N., Urban J., Naděždin V., **2009 - 4**. „Transpiration of Douglas-fir and Norway spruce trees and stands on rich and acid sites (Křtiny and Hůrky, respectively)“ (in Czech). In: Kantor P.: Douglas fir – the most important introduced species in polyfunctional and sustainable forest management (in the Czech Republic). Project NAZV QG 60063, Activity A02/07. 60-89pp. (R-63)

Čermák J., Naděždina N., Urban J., Naděždin V., **2008 - 3**. „Transpiration of Douglas-fir and Norway spruce trees and stands on rich and acid sites (Křtiny and Hůrky, respectively)“ (in Czech). In: Kantor P.: Douglas fir – the most important introduced species in polyfunctional and sustainable forest management (in the Czech Republic). Project NAZV QG 60063, Activity Activity A02/07. 53-73pp. (R-62)

Čermák J., Naděždina N., Urban J., Naděždin V., **2007 - 2**. „Transpiration of Douglas-fir and Norway spruce trees and stands on rich and acid sites (Křtiny and Hůrky, respectively)“ (in Czech). In: Kantor P.: Douglas fir – the most important introduced species in polyfunctional and sustainable forest management (in the Czech Republic). Project NAZV QG 60063, Activity Activity A02/07. 41-57pp. (R-61)

Čermák J., Nadezhdina N., Urban J., Nadezhdin V. **2006 - 1**. “Selection of experimental plots and sample trees (*Pseudotsuga menziessii* M) for transpiration measurements. Estimation of biometric parameters of sample trees including leaf area and absorbing root surface” (in Czech). In: Kantor P.: Douglas fir – the most important introduced species in polyfunctional and sustainable forest management (in the Czech Republic). Project NAZV QG 60063, Activity A503. 90-101p. (R-60)

Cudlin P., Čermák J., Nadezhdina N., Urban J., Nadezhdin V. **2006.** „Testing of new instrumental methods for measurement of whole-tree root systems“ (in Czech). Research report of the Inst.For.Ecol., Mendel Univ. Brno, COST E38.002. Id.code: 1P05 0C077. 7p. (R-59)

Cermák J. and Martinkova M. **2006**: Evaluation of growing conditions of the protected specimen of *Platanus acerifolia* Willd. At Veveri street in Brno. Res. Rep. of Mendel Univ. of Agriculture and Forestry in Brno, 8p. Brno 2006. (R-58)

Čermák J., Nadezhdina N. **2005**. „Testing of new instrumental methods for measurement of whole-tree root systems“ (in Czech).Res.report of the Inst.For.Ecol.,Mendel Univ. Brno,COST E38.002,Id.code: P05OC077. 8p.

 (R-57)

Nadezhdina N, J. Čermák, J.Gašpárek, R.Ceulemans **2005**: Study of hydraulic architecture of a ring-porous oak tree through sap flow measurements. In: Sap flow and water balance of heterogenous forests. Final workshop Bilateral Scientific Exchange Project (BWS Flanders) between the Univ. of Antwerpen (Dept. of Biology, Wilrijk, Belgium) and the Mendel Univ. of Agriculture and Forestry (Brno, Czech Republic), Antwerpy 10-11.Nov.2005. (R-56)

Čermák J., Nadezhdina N., Ceulemens R., Meiresonne L. **2005**: Sap flow dynamics, patterns and tree structure in large pines. In: Sap flow and water balance of heterogenous forests. Final workshop Bilateral Scientific ExchangeProject (BWS Flanders) between the Univ. of Antwerpen (Dept. of Biology, Wilrijk, Belgium) and the Mendel Univ. of Agriculture and Forestry (Brno, Czech Republic), Antwerpy 10-11.Nov.2005. (R-55)

Čermák J., Nadeždina N., Gašpárek J., Adamčík L., Ulrich R. **2005**: “Comparing of instrumental methods for root systems measurement of in whole trees” (in Czech). Res.Rep. for the Mendel University Training Forest Enterprise in Krtiny. (10p.) Mendel Univ. Brno, Jan 27.2005. (R-54)

Alexandr P.,Čermák J., Fér F. **2004**. Evaluation of the level of jeopardizing and damage to the environment in the Ztracená Slat swamp, Šumava mountains. Judgement for the Police of the Czech Republic, Dept.of corruption and financial crime, Plzen. (R-53)

Čermák,J., Prax,A. a Nadezhdina,N. **2003**: “Problems of permanent co-existence of urban trees and constructions” (in Czech). Res.Rep. of the Biosphere program for the Ministry of Environment, VaV/660/1/02, “Strategic and methodical support of urban greenery maintenance and development”, 27p. Dec.2003. (R-52)

Ulrich,R. a Čermák,J. **2003**: “Biometric characteristics of spruce (*Picea abies* (L.) Karst.) on limed and non-limed sites in the region of Krusne Hory mountains” (in Czech). Res.Rep. of the Inst.of Forest Ecology, Mendel University of Agriculture and Forestry in Brno, for the Ministry of Agriculture of the Czech Rep. 20p.(R-51)

Čermák,J., Nadeždina,N., Gašpárek,J. Nadeždin,V., Hruška,J. **2003**: „Testing of changes in root absorption abilities after damage“ (in Czech). ). Res.Rep. of the Inst.of Forest Ecology, Mendel University of Agriculture and Forestry in Brno, for the University Training Forest Enterprise Krtiny, 18p. (R-50)

Čermák,J., Nadeždina,N., Gašpárek,J. a Tesar,V. **2002**: "Estimation of needle distribution and irradiance as a background for optimization of thinning" (in Czech). Res.Rep. of the Inst.of Forest Ecology, Mendel University of Agriculture and Forestry in Brno, for the University Training Forest Enterprise Krtiny, 8p. (R-49)

Nadezhdina,N., Čermák,J., Nadezhdin,V., Gašpárek,J., Ulrich,R., Neruda,J. **2002**: Quantification of mechanical destruction of root systems in spruce by heavy machinery (in Czech). Research report of the Faculty of Forestry and Wood Technology, Mendel University of Agriculture and Forestry in Brno, for the University Training Forest Enterprise Krtiny. 20p. (R-48)

Čermák J. Nadezhdina N. Nadezhdin V. **2001**. "Transpiration of full-grown oak and lime trees in the Kralovstvi and Zaseky forest districts and evaluation the health state of trees" (in Czech). Research report, Institute of Forest Ecology, Mendel Univ.of Agricult.and Forestry in Brno for the Helpforest Inc.,Olomouc (32p.)(R-47)

Nadezhdina N. Čermák J. Nadezhdin V. Minnaert M. Meiresonne L. **2000**. Study of diurnal and seasonal courses of the transpiration of two forest stands. Inst.of Forest Ecology, Mendel Univ. Brno, Czech Rep. & Inst. for Forestry and Game Management (IBW), Ministry of Flemish Community, Belgium. (R-46)

Čermák J. Nadezhdina N. Tatarinov F. Nadezhdin V. **2000**. The response of the water flows of the boreal forest region at the Volga's source area to climatic and land-use changes. Partner Final Report of the project VolgaForest (Coord.by G.Gravenhorst,Gottingen Univ.Germany),Inst.of Forest Ecology,Mendel Univ.Brno, Oct.10, 2000.25p. (R-45)

Čermák J. Nadezhdina N. Nadezhdin V. **1999**. "Transpiration of full-grown oak and lime trees in the Kralovstvi forest district and evaluation the health state of trees" (in Czech). Research report, Institute of Forest Ecology, Mendel University of Agriculture and Forestry in Brno for the Helpforest Inc., Olomouc (31 p.). (R-44)

Čermák J. Nadezhdina N. Prax A. Nadezhdin V. **1998**. "Transpiration of full-grown oak and lime trees in the Království forest district and evaluation the health state of trees" (in Czech). Research report, part 2, Institute of Forest Ecology, Mendel Univ.of Agriculture and Forestry in Brno for the Helpforest Inc.,Olomouc(36p.). (R-43)

Čermák J. Nadezhdina N. Raschi A. Tognetti R. **1998**. Transpiration of typical natural plant stands in Tuscany. Research Report, Institute of Forest Ecology Mendel University of Agriculture and Forestry, Brno, Czech Republic for the Ce.S.I.A. Centro di Studio per l'Applicazione dell Informatica in Agricoltura - Academia dei Georgofili, Firenze, Italy, Part of the project MEGARICH (EC project: ENV4/CT97/0503), Nov.98, 47p. (R-42)

Čermák J. Prax A. Krejzar T. Šustek S. Tatarinov F. Nadezhdina N. **1998**. "Changes of ecophysiological processes and structures in woody species under stress conditions" (in Czech), Resp.Rep., part of the project VS 96077 "Identification of stresses and their impact in forest ecosystems, Klimo E.(coord.),Mendel Univ.Brno, 35p. (R-41)

Čermák J. Stanìk Z. Aubrecht L. Koller J. **1998**, upgrade **2001**. "Electrodiagnostic methods for estimation of latent injuries in forest woody species" (in Czech). Res.Rep.Inst.Forest Ecology, Mendel Univ.Brno, for Forests of Czech Republic, Hradec Kralové, March 2,1998. 14p. (R-40)

Nadezhdina N. Čermák J. Jimenez M.S. Morales D. **1998**. Radial pattern of sap flow in trunks of laurel forest, ornamental and fruit woody species in Tenerife,Canary Islands.Wor.Res.Rep.,Univ.La Laguna,March 1998,22p.

 (R-39)

Čermák J. Nadezdina N. Raschi A. Tognetti R. **1997**. Transpiration of Quercus pubescens and Quercus cerris stands in Tuscany. Inst. of Forest Ecology Mendel Univ. of Agriculture and Forestry, Brno, Czech Rep. for the Ce.S.I.A. Centro di Studio per l'Applicazione dell Informatica in Agricoltura - Academia dei Georgofili, Firenze, Italy, Part of the project EC: "RESMEDES" ENV4 / CT95 / 0094, Dec'97, 35 p. (R-38)

Nadezhdina N. Čermák J. Meiresonne L. Ceulemans R. **1997**. Sap flow study in coniferous and broadleaf trees and shrubs in Brasschaat and Balegem, Belgium. Res.Rep. of the Inst.of Forest Ecology, Mendel Univ.of Agriculture and Forestry, Brno, for the University of Antwerpen, Wilrijk, Nov'97, 86p. (R-37)

Čermák J. Hruška J. **1997**. "Root distribution and water consumption in tall trees with small and large crowns in the city of Brno" (in Czech). Res.Rep. of the Inst.of Forest Ecology, Mendel Univ.of Agriculture and Forestry, Brno, for the Municipal Authorities, Brno. August 1997, 26p. (R-36)

Čermák J. Hruška J. Martinková M. Krejzar T. Šustek S. Nadezhdina N. Tatarinov F. **1997**. "On the situation of large trees and their impact on constructions at the public baths Zábrdovice" (in Czech). Res.Rep. of the Inst.of Forest Ecology, Mendel's Univ.of Agriculture and Forestry, Brno, for the Municipal Author.,Brno.March 1997,49p. (R-35)

Čermák J. **1996**. "Water use economy and responses of forest woody species on changes of environmental conditions in a wide range of moisture conditions as a model of behavior under global warming (part 1). Physiological responses of large trees in a floodplain forest to changes in water regime in southern Moravia (part 2)" (in Czech). Research Report, Institute of Forest Ecology,Mendel Univ.Brno,for the Czech Grant Agency,Project No.501/94/0954,1994-96. (R-34)

Čermák J. and Nadezdina N. **1996**. Testing the sap flow measurements in Quercus ilex, Montalto experimental site. Research Report of the Institute of Forest Ecology, Mendel University of Agriculture and Forestry, Brno, Czech Republic for the Dipartmento di Scienze dell' Ambiente Forestale e delle sue Risorse, Universita degli Studi della Tuscia, Viterbo, Italy,(Project:Long-term effects of CO2-increase and climate change on Europ. forests), Oct. 1996,18p. (R-33)

Čermák J. Kučera J. Hinckley T. Bauerle B. **1996**. Sap flow rate and growth in giant trees at different heights. Working Research Report from the Wind River Canopy Crane Experimental Site, August 1966 (49p.). (R-32)

Čermák J. Kravka M. Krejzar T. Kučera J. **1995**. "Studies of revitalization of floodplain forests in southern Moravia. I. Transpiration of floodplain forest in Lednice during periods with no natural and artificial floods." (in Czech). Res.Rep. of the Inst. of Forest Ecology, Mendel Univ. Brno for the Ministry of Agriculture and the Forest Enterprise of Czech Republic in Židlochovice, (20p.). (R-31)

Čermák J. and Kučera J. **1994**. "Functional characteristics of spruce around the Great Darko pond, Žïár region" (in Czech). Res.Rep.of Inst.For.Ecol., Agr.Univ.Brno, for Forest Enterprise of Dr.Kinsky, Žïár n/Saz. 16p.

 (R-30)

Čermák J. Jimenez MS. Morales D. **1993**. Water relations and structure of natural forests in Canary Islands. 1. Stand structure and scaling of transpiration from trees to stands in Laurus forest, Tenerife. Univ.La Laguna, Spain 90p. (R-29)

Čermák J. **1992**. Transpiration flow and water consumption by mature Norway spruce trees on the Rajec experimental plot. In: Report from Project Rajec: "Manmade Spruce Ecosystems (structure, functions, production, processes)" Klimo E. Maršálek J. (eds.) p.79-93, Univ. of Agricult., Faculty of Forestry, Institute of Forest Ecology, Brno. (R-28)

Matyssek R. Čermák J. Kučera J. **1991**. Zur Ursache des Buchensterbens im Hegiwald: Eine ökophysiologische Untersuchung zum Wasserverbrauch von Einzelnbaumen. 27 pp. Res.Rep.Eidg.Forschunganstalt fur Wald, Schnee und Landschaft, Birmensdorf ZH, Switzerland. (R-27)

Čermák J. Neča J. **1990**. "Phytogenous volatile substances and their importance in forest ecosystems" (in Czech). Research Report, Institute of Forest Ecology, Agr.Univ.Brno, VU: VI-4-3/09- (R-26)

Čermák J. Kučera J. Vermouzková J. **1990**. "Water relations and water consumption of mature trees in forest ecosystems under normal and stress conditions" (in Czech). Res.Report, Inst.For.Ecol., Agr.Univ.Brno, VU:VI-4-3/09-1. (R-25)

Čermák J. Kučera J. Bednáøová E. **1990**. "Measurement and evaluation of transpiration of woody species (oak and spruce) in "Mlynárùv luh", Krivoklátsko region" (in Czech). 60 pp. Res.Rep. Inst.of Forest Ecology, Agr.Univ.Brno (for the Central Geological Institute, Prague). (R-24)

Čermák J. Kučera J. Bednárová E. **1988**. "Measurement and evaluation of transpiration of woody species (oak) in "Mlynáøùv luh", Krivoklátsko region"(in Czech). 47p. Res.Rep. Inst.Forest Ecology, Agr.Univ.Brno (for the Central Geological Institute, Prague). (R-23)

Čermák J. Kučera J. Bednárová E. **1987**. "Estimation of stand water consumption on the basis of measurement of transpiration flow rate in selected fully grown trees spruce trees in relation to environmental conditions" (in Czech). 41 pp. Res.Rep.Inst.Forest Ecology, Agr.Univ.Brno (for the Water Management Research Institute, Prague). (R-22)

Čermák J. Kučera J. Bednárová E. **1986**. "Estimation of water consumption of forest stand on the basis of measurement of selected spruce tress in relation to meteorological conditions" (in Czech). 30 pp. Res. Rep. Inst. Forest Ecology, Agr.Univ.Brno (for the Water Management Research Institute Prague). (R-21)

Čermák J. Kučera J. Štepánková M. Bednárová E. **1985**. "Measurement and evaluation of transpiration in fully grown trees at the water balance research site in Nedamov" (in Czech). 51 pp. Res.Rep., Inst.Forest Ecology, Agr.Univ.Brno (for the Construction Geology Enterprise, Prague). (R-20)

Čermák J. Štepánková M. Kučera J. **1985**. "Water relations in the soil-plant-atmosphere continuum of trees consumption of trees in relation to their growth and stability" (in Czech) Research Report, Inst.Forest Ecology, Agr.Univ.Brno, VU:VI-2-3/05-3. (R-19)

Čermák J. Štepánková M. **1985**. "Phytogeneous volatile substances and their importance in forest ecosystems" (in Czech). Res.Rep., Inst.of Forest Ecology, Agr.Univ.Brno, VU:VI-2-3/05-5. (R-18)

Čermák J. Kučera J. Bednárová E. Štepánková M. **1984**. "Measurement and evaluation of transpiration of trees at the water balance site in Nedamov" (in Czech).50pp. Res.Rep. Inst.of Forest Ecology, Agr.Univ.Brno (for the Construct. Geology Enterprise, Prague). (R-17)

Čermák J. Kučera J. Štepánková M. Bednárová E. **1983**. "Measurement and evaluation of transpiration of trees at the water balance site in Nedamov"(in Czech).49p.Res.Rep.,Inst.of Forest Ecology,Agr.Univ.Brno (for the Construction Geology Enterprise, Prague). (R-16)

Čermák J. Kučera J. Štepánková M. **1983**. "Water relations in the soil-plant-atmosphere continuum, indication of stress and water consumption in woody species as related to their growth and stability" (in Czech). Research Report, Inst.of Forest Ecology, Agr.Univ.Brno, VU: VI-2-3/05-3. (R-15)

Čermák J. Kučera J. Štepánková M. Bednáøová E. **1982**. "Measurement and evaluation of transpiration of trees at the water balance site in Nedamov" (in Czech). 44p. Res.Rep., Inst.of Forest Ecology, Agr.Univ.Brno (for the Construction Geology Enterprise, Prague). (R-14)

Čermák J. Kučera J. Štepánková M. **1981**. "Measurement of transpiration at the lysimetric station in Nedamov" (in Czech). 33p. Res.Rep., Inst.of Forest Ecology, Agr.Univ.Brno (for the Construct. Geology Ent. Prague).

 (R-13)

Čermák J. Kučera J. Štepánková M. Prax A. **1981**. "Measurement and evaluation of transpiration flow rate in fully grown trees growing near buildings and evaluation of soil hydrolimits in soils of the housing Development of Hodonin-Bazantnice during the growing season 1981" (in Czech). 59pp. Res. Rep. Inst. of Forest Ecology, Agr.Univ., Brno (for the Regional Geological Committee, Brno). (R-12)

Čermák J. Kučera J. **1980**. "Measurement and evaluation of transpiration flow rate in fully grown trees growing near buildings in the housing development of Hodonin-Bazantnice" (in Czech). 14 p. Res.Rep., Inst.of Forest Ecology, Agr.Univ.Brno (for the Regional Geological Committee, Brno). (R-11)

Čermák J. Kučera J. Prax A., Zidek, L. **1980**. A: "Measurement and evaluation of transpiration flow rate in fully grown trees at the lysimetric station in the model watershed of Libechovka" B: ”Evaluation of soils and soil moisture” (in Czech). 49pp.Res.Rep.,Inst. of Forest Ecology, Agr.Univ.Brno (for the Construct.Geology Enterprise,Prague). (R-10)

Penka M. Čermák J. **1980**. "Phytogenous volatile substances and methods of their study in forest ecosystems" (in Czech). Res.Rep., Forest Fac., Agr.Univ.Brno, VU: VI-2-2/6-2. (R-9)

Penka M. Čermák J. **1980**. "Water relations of fully grown trees and large shrubs" (in Czech). Res.Rep.,Forest Fac., Agr.Univ.Brno, VU: VI-2-2/6-2. (R-8)

Čermák J. Kučera J. Prax A. Zidek L. Dobravská K. **1979**. A: "Estimation of transpiration flow rate in fully grown trees at the model watershed of Libechovka near the lysimetric station" B: “Estimation of soil hydrolimits”(in Czech). 32 pp. Res.Rep., Inst.of Forest Ecology, Agr.Univ.Brno (for the Construction Geology Enterprise, Prague). (R-7)

Čermák J. Kučera J. Prikryl V. Dobravská K. **1978**. "Estimation of seasonal and selected diurnal characteristics of transpiration flow rate and water consumption of tall trees in forest stands as main parameters of site water balance at the model watershed of Libechovka" (in Czech). Res.Rep. of the Inst.Forest Ecology, Agr.Univ.Brno, 33p., for the Construct.Geology Enterprise, Prague. (R-6)

Čermák J. Kučera J. **1977**. "Estimation of general values of transpiration flow rate in spruce at the experimental site of central Geological institute in Trnavka" (in Czech) 47-85 pp. In: Res.Rep., Inst.of Forest Ecology, Agr.Univ.Brno (for the Construction Geology Enterprise, Prague). (R-5)

Penka M. Čermák J. **1975**. "Photosynthesis and plant water relations - water relations of woody species" (in Czech). Research Report, Forest Fac., Agr.Univ.Brno, VU: VI-2-1/26a. (R-4)

Penka M. Čermák J. **1975**. "Physiology of nourishment of juvenile woody species-metabolites (resins) - II." (in Czech). Res.Rep., Forest Fac., Agr.Univ.Brno, VU: VI-5-1/1. (R-3)

Penka M. Čermák J. **1973**. "Physiology of nourishment of juvenile woody species - metabolites (resins) - I." (in Czech). Res.Rep., Forest Fac., Agr.Univ.Brno, VU: VI-5-1 (R-2)

Štěpánek V., Penka M., Čermák J. **1972**. "Physiology of nourishment of juvenile woody species – transpiration and shoot water content in oak" (in Czech). Res.Rep., Forest Fac., Agr.Univ.Brno, VU: VI-5-1” 45p. (R-1)

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