

## Publikationen (seit 2010)

- Beikircher B, Ameglio T, Cochard H, Mayr S (2010) Limitation of the Cavitron technique by conifer pit aspiration. *Journal of Experimental Botany* 61, 3385-3393
- Beikircher B, Florineth F, Mayr S (2010) Recultivation of rocky slopes based on planted gabions and use of drought-preconditioned woody species. *Ecological Engineering* 36, 421-426
- Mayr S, Beikircher B, Obkircher M-A, Schmid P (2010) Hydraulic plasticity and limitations of alpine *Rhododendron* species. *Oecologia* 164, 321-330
- Mayr S, Schwienbacher F, Dämon B (2010) Increased winter transpiration of Norway spruce needles after infection by the rust *Chrysomyxa rhododendri*. *Protoplasma* 243, 137-143
- Mayr S, Sperry JS (2010) Freeze-thaw induced embolism in *Pinus contorta*: centrifuge experiments validate the "thaw-expansion hypothesis" but conflict with ultrasonic emission data. *New Phytologist* 185, 1016-1024
- Mayr S, Zublasung V (2010) Ultrasonic emissions from conifer xylem exposed to repeated freezing. *Journal of Plant Physiology* 167, 34-40
- Charra-Vaskou K, Mayr S (2011) The hydraulic conductivity of the xylem in conifer needles (*Picea abies* and *Pinus mugo*). *Journal of Experimental Botany* 62, 4383-4390
- Mayr S, Rosner S (2011) Cavitation in dehydrating xylem of *Picea abies*: energy properties of ultrasonic emissions reflect tracheid dimensions. *Tree Physiology* 31, 59-67
- Peguero-Pina JS, AlQuézar-Alquézar JM, Mayr S, Cochard H, Gil-Pelegrín E (2011) Embolism induced by winter drought in *Pinus sylvestris* L.: a possible reason for dieback near its southern distribution limit? *Annals of Forest Science* 38, 565-574
- Charra-Vaskou K, Badel E, Burlett R, Cochard H, Delzon S, Mayr S (2012) Hydraulic efficiency and safety of vascular and non-vascular components in *Pinus pinaster* leaves. *Tree Physiology* 32, 1161-1170
- Charra-Vaskou K, Charrier G, Wortemann R, Beikircher B, Cochard H, Ameglio T, Mayr S (2012) Drought and frost resistance of trees: a comparison of four different species at different sites and altitudes. *Annals of Forest Science* 69, 325-333
- Choat B, Jansen S, Brodribb TJ, Cochard H, Delzon S, Bhaskar R, Bucci SJ, Field TS, Gleason SM, Hacke UG, Jacobsen AL, Lens F, Maherali H, Martínez-Vilalta J, Mayr S, Mencuccini M, Mitchell PJ, Nardini A, Pittermann J, Pratt RB, Sperry JS, Westoby M, Wright IJ, Zanne AE (2012) Global convergence in the vulnerability of forests to drought. *Nature* 491, 752-755
- Mayr S, Schmid P, Beikircher B (2012) Plant water relations in alpine winter. In: Lütz C (ed.) *Plants in Alpine Regions: Cell Physiology of Adaptation and Survival Strategies*, Springer. Berlin. 153-162
- Beikircher B, DeCesare C, Mayr S (2013) Hydraulics of high-performance orchard trees: a case study on *Malus domestica*. *Tree Physiology* 33, 1296-1307
- Beikircher B, Mayr S (2013) Winter peridermal conductance of apple trees: lammas shoots and spring shoots compared. *Trees* 27, 707-715
- Torres-Ruiz JM, Diaz-Espejo A, Morales-Sillero A, Martín-Palomo MJ, Mayr S, Beikircher B, Fernández JE (2013) Shoot hydraulic characteristics, plant water status and stomatal response in olive trees under different soil water conditions. *Plant and Soil* 373, 77-87
- Charrier G, Charra-Vaskou K, Legros B, Améglio T, Mayr S (2014) Changes in ultrasound velocity and attenuation indicate freezing of xylem sap. *Agricultural and Forest Meteorology* 185, 20-25

- Charrier G, Charra-Vaskou K, Kasuga J, Cochard H, Mayr S, Améglio T (2014) Freeze-thaw stress. Effects of temperature on hydraulic conductivity and ultrasonic activity in ten woody angiosperms. *Plant Physiology* 164, 992-998
- Ganthaler A, Bauer H, Gruber A, Mayr M, Oberhuber W, Mayr S (2014) Effects of the needle bladder rust (*Chrysomyxa rhododendri*) on Norway spruce - implications for subalpine forests. *Journal of European Forest Research* 133, 201-211
- Mayr S, Schmid P, Laur J, Rosner S, Charra-Vaskou K, Dämon B, Hacke UG (2014) Uptake of water via branches helps timberline conifers refill embolized xylem in late winter. *Plant Physiology* 164, 1731-1740
- Mayr S, Bertel C, Dämon B, Beikircher B (2014) Static and dynamic bending has minor effects on xylem hydraulics of conifer branches (*Picea abies*, *Pinus sylvestris*). *Plant, Cell and Environment* 37, 2151-2157
- Nolf M, Pagitz K, Mayr S (2014) Physiological acclimation to drought stress in *Solidago canadensis* L. *Physiologia Plantarum* 150, 529-539
- Torres-Ruiz JM, Cochard H, Mayr S, Beikircher B, Diaz-Espejo A, Rodriguez-Dominguez CM, Badel E, Fernandez JE (2014) Vulnerability to cavitation in *Olea europaea* current-year shoots: further evidence of an open-vessel artefact associated with centrifuge and air-injection techniques. *Physiologia Plantarum* 152, 465-474
- Mayr S, Kartusch B, Kikuta S (2014) Evidence for air-seeding: watching the formation of embolism in conifer xylem. *Journal of Plant Hydraulics* 1, e0004
- Charrier G, Pramsohler M, Charra-Vaskou K, Saudreau M, Améglio T, Neuner G, Mayr S (2015) Ultrasonic emissions during ice nucleation and propagation in plant xylem. *New Phytologist* 207, 570-578
- Ganthaler A, Mayr S (2015) Dwarf shrub hydraulics: two *Vaccinium* species (*V. myrtillus*, *V. vitis-idaea*) of the European Alps compared. *Physiologia Plantarum* 155, 424-434
- Ganthaler A, Mayr S (2015) Temporal variation in airborne spore concentration of *Chrysomyxa rhododendri*: correlation with weather conditions and consequences for Norway spruce infection. *Forest Pathology* 45, 443-449
- Ganthaler A, Mayr S (2015) *Vaccinium gaultherioides*: Another insight into water relations of alpine dwarf shrubs. *Journal of Plant Hydraulics* 2, e-004
- Hacke UG, Lachenbruch B, Pittermann J, Mayr S, Domec J-C, Schulte PJ (2015) Hydraulic Architecture of Conifers. In: Hacke UG (ed.) *Functional and Ecological Xylem Anatomy*. Springer. Berlin. 39-73
- Nolf M, Beikircher B, Rosner S, Nolf A, Mayr S (2015) Xylem cavitation resistance can be estimated based on time-dependent rate of acoustic emissions. *New Phytologist* 208, 625-632
- Nolf M, Creek D, Duursma R, Holtum J, Mayr S, Choat B (2015) Stem and leaf hydraulic properties are finely coordinated in three tropical rain forest tree species. *Plant, Cell and Environment* 38, 2652-2661
- Battipaglia G, Savi T, Ascoli D, Castagneri D, Esposito A, Mayr S, Nardini A (2016) Effects of prescribed burning on ecophysiological, anatomical and stem hydraulic properties in *Pinus pinea* L. *Tree Physiology* 36, 1019-1031
- Beikircher B, Mayr S (2016) Avoidance of sampling artefacts in embolism analyses: a case study on *Malus domestica*. *Tree Physiology* 36, 797-803
- Beikircher B, Mittmann C, Mayr S (2016) Prolonged soil frost affects hydraulics and phenology of apple trees. *Frontiers in Plant Science* 7, 867
- Bouche P, Delzon S, Choat B, Badel E, Brodribb T, Burrett R, Cochard H, Charra-Vaskou K, Lavigne B, Li S, Mayr S, Morris H, Torres-Ruiz J, Zufferey V, Jansen S (2016) Are needles of

*Pinus pinaster* more vulnerable to xylem embolism than branches? New insights from X-ray computed tomography. *Plant, Cell and Environment* 39, 860-870

Charra-Vaskou K, Badel E, Charrier G, Bonhomme M, Foucat L, Mayr S, Améglio T (2016) Cavitation and water fluxes driven by ice water potential in trees during freeze-thaw cycles. *Journal of Experimental Botany* 67, 739-750

Gleason SG, Westoby M, Jansen S, Choat B, Brodribb TJ, Cochard H, Delzon S, Hacke UG, Jacobson AL, Johnson DM, Lens F, Maherali H, Martínez-Vilalta J, Mayr S, McCulloh KA, Morris H, Nardini A, Plavcová L, Pratt RB, Schreiber SG, Zanne AE (2016) On research priorities to advance understanding of the safety-efficiency tradeoff in xylem. *New Phytologist* 211, 1156–1158

Gleason SG, Westoby M, Jansen S, Choat B, Hack UG, Pratt RB, Bhaskar R, Brodribb TJ, Bucci SJ, Cao K-F, Cochard H, Delzon S, Domec J-C, Fan Z-X, Field TS, Jacobsen AL, Johnson DM, Lens F, Maherali H, Martínez-Vilalta J, Mayr S, McCulloh KA, Mencuccini M, Mitchell PJ, Morris H, Nardini A, Pittermann J, Plavcová L, Schreiber SG, Sperry JS, Wright IJ, Zanne AE (2016) Weak tradeoff between xylem safety and xylem-specific hydraulic efficiency across the world's woody plant species. *New Phytologist* 209, 123-136

Lajos K, Mayr S, Buchner O, Blaas K, Holzinger A (2016) A new microscopic method to analyse desiccation-induced volume changes in aeroterrestrial green algae. *Journal of Microscopy* 263, 192-199

Losso A, Nardini A, Nolf M, Mayr S (2016) Elevational trends in hydraulic efficiency and safety of *Pinus cembra* roots. *Oecologia* 180, 1091-1102

Mayr S, Améglio T (2016) Freezing stress in tree xylem. In: Lüttge U, Beyschlag W (eds.) *Progress in Botany* 77, 382-414

Nolf M, Rosani A, Ganthaler A, Beikircher B, Mayr S (2016) Herb hydraulics: inter- and intraspecific variation in three *Ranunculus* species. *Plant Physiology* 170, 2085-2094

Savi T, Marin M, Juglio J, Patruzellis F, Mayr S, Nardini A (2016) Leaf hydraulic vulnerability protects stem functionality under drought stress in *Salvia officinalis* L.. *Functional Plant Biology* 43, 370-379

Cailleret M, Jansen S, Robert E, DeSoto L, Aakala T, Antos J, Beikircher B, Bigler C, Bugmann H, Caccianiga M, Čada V, Camarero JJ, Cherubini P, Cochard H, Coyea M, Cufar K, Das A, Davi H, Delzon S, Dorman M, Gea-Izquierdo G, Gillner S, Haavik L, Hartmann H, Hereş A-M, Hultine K, Janda P, Kane J, Kharuk VI, Kitzberger T, Klein T, Kramer K, Lens F, Levanic T, Linares JC, Lloret F, Vale R, Lombardi F, López Rodríguez R, Makinen H, Mayr S, Mészáros I, Metsaranta J, Minunno F, Oberhuber W, Papadopoulos A, Peltoniemi M, Petritan AM, Rohner B, Sangüesa-Barreda G, Sarris D, Smith J, Stan A, Sterck F, Stojanović D, Suarez M, Svoboda M, Tognetti R, Torres-Ruiz JM, Trotsiuk V, Villalba R, Vodde F, Westwood A, Wyckoff P, Zafirov N, Martínez-Vilalta J. (2017) A synthesis of radial growth patterns preceding tree mortality. *Global Change Biology* 23, 1675-1690

Medl A, Mayr S, Rauch HP, Weihs P, Florineth F (2017) Microclimatic conditions of 'Green Walls', a new restoration technique for steep slopes based on a steel grid construction. *Ecological Engineering* 101, 39-45

Nardini A, Savi T, Losso A, Petit G, Pecilè S, Tromba G, Mayr S, Trifilò P, Lo Gullo MA, Salleo S (2017) X-ray micro-tomography observations of xylem embolism in stems of *Laurus nobilis* L. are consistent with hydraulic measurements of percentage loss of conductance. *New Phytologist* 213, 1068-1075

Beikircher B, Mayr S (2017) Annual patterns of xylem embolism in high-yield apple cultivars. *Functional Plant Biology*, in press

Charrier G, Nolf M, Leitinger G, Charra-Vaskou K, Losso A, Tappeiner U, Améglio T, Mayr S (2017) Monitoring of freezing dynamics in trees: a simple phase shift causes complexity. *Plant Physiology*, in press

Ganthaler A, Stöggli W, Mayr S, Kranne I, Schüler S, Wischnitzki E, Sehr EM, Fluch S, Trujillo-Moya C (2017) Association genetics of phenolic needle compounds in Norway spruce with variable susceptibility to needle bladder rust. *Plant Molecular Biology*, in press