

## LISTA PUBBLICAZIONI

### Articoli pubblicati in riviste indicizzate ISI:

2023

Petit G, Mencuccini M, Carrer M, Prendin AL, Hölttä T (2023) Axial conduit widening, tree height, and height growth rate set the hydraulic transition of sapwood into heartwood. *Journal of Experimental Botany*. DOI: 10.1093/jxb/erad227.

2022

Petit G, Zambonini D, Hesse BD, Häberle KH (2022) No xylem phenotypic plasticity in mature *Picea abies* and *Fagus sylvatica* trees after five years of throughfall precipitation exclusion. *Global Change Biology* 28: 4668-4683. DOI: 10.1111/gcb.16232.

2021

Petit G, Bleve G, Gallo A, Mita G, Montanaro G, Nuzzo V, Zambonini D, Pitacco A (2021) Susceptibility to *Xylella fastidiosa* and functional xylem anatomy in *Olea europaea*: revisiting a tale of plant–pathogen interaction. *AoB Plants* 13: plab027. DOI: 10.1093/aobpla/plab027.

2020

Cardoso A, Billon LM, Fanton Borges A, Fernandez-de-Uña L, Gersony JT, Güneý A, Johnson KM, Lemaire C, Mrad A, Wagner Y, **Petit G** (2020) New developments in understanding plant water transport under drought stress. *New Phytologist* 227: 1025-1027. DOI: 10.1111/nph.16663.

Collalti A, Tjoelker MG, Hoch G, Mäkelä A, Guidolotti G, Heskell M, **Petit G**, Ryan MG, Battipaglia G, Matteucci G, Prentice IC (2020) Plant respiration: Controlled by photosynthesis or biomass? *Global Change Biology* 26: 1739-1753. DOI: 10.1111/gcb.14857.

<sup>√</sup>Kiorapostolou N, Camarero JJ, Carrer M, Sterck F, Brigita Brigita, Sangüesa-Barreda G, **Petit G** (2020) Scots pine trees react to drought by increasing xylem and phloem conductivities. *Tree physiology* 40: 774-781. DOI: 10.1093/treephys/tpaa033.

Lechthaler S, Kiorapostolou N, Pitacco A, Anfodillo T, **Petit G** (2020) The total path length hydraulic resistance according to known anatomical patterns: what is the shape of the root-to-leaf tension gradient along the plant longitudinal axis? *Journal of Theoretical Biology* 502: 110369. DOI: 10.1016/j.jtbi.2020.110369.

Pandey S, Cherubini P, Saurer M, Carrer M, **Petit G** (2020) Effects of climate change on treeline trees in Sagarmatha (Mt. Everest, Central Himalaya). *Journal of Vegetation Science*: in press. DOI: 10.1111/jvs.12921.

2019

Alber M, **Petit G**, Sellin A (2019) Does elevated air humidity modify hydraulically relevant anatomical traits of wood in *Betula pendula*? *Trees, Structure and Function* 33: 1361-1371. DOI: 10.1007/s00468-019-01863-0.

- <sup>√</sup>Kiorapostolou N, Da Sois L, Petruzzellis F, Savi T, Trifilò P, Nardini A, **Petit G** (2019) Vulnerability to xylem embolism correlates to wood parenchyma fraction in angiosperms but not in gymnosperms. *Tree Physiology* 39: 1675-1684. DOI: 10.1093/treephys/tpz068.
- Lechthaler S, Turnbull TL, Gelmini Y, Pirotti F, Anfodillo T, Adams MA, **Petit G** (2019) A standardization method to disentangle environmental information from axial trends of xylem anatomical traits. *Tree Physiology* 39: 495-502. DOI: 10.1093/treephys/tpy110.
- Luss S, Lundqvist SO, Evans R, Grahn T, Olsson L, **Petit G**, Rosner S (2019) Within-ring variability of wood structure and its relationship to drought sensitivity in Norway spruce trunks. *IAWA Journal* 40: 288-310. DOI: 10.1163/22941932-40190216.
- Savi T, Tintner J, Da Sois L, Grabner M, **Petit G**, Rosner S (2019) The potential of Mid-Infrared spectroscopy for prediction of wood density and vulnerability to embolism in woody angiosperms. *Tree Physiology* 39: 503-510. DOI: 10.1093/treephys/tpy112.
- Trifilò P, Kiorapostolou N, Petruzzellis F, Vitti S, **Petit G**, Lo Gullo MA, Nardini A, Casolo V (2019) Hydraulic recovery from xylem embolism in excised branches of twelve woody species: Relationships with parenchyma cells and non-structural carbohydrates. *Plant Physiology and Biochemistry* 139: 513-520. DOI: 10.1016/j.plaphy.2019.04.013.

2018

- González-Muñoz N, Sterck F, Torres-Ruiz JM, **Petit G**, Cochard H, von Arx G, Lintunen A, Caldeira MC, Capdeville G, Copini P, Gebauer R, Grönlund L, Hölttä T, Lobo-do-Vale R, Peltoniemi M, Stritih A, Urban J, Delzon S (2018) Quantifying *in situ* phenotypic variability in the hydraulic properties of four tree species across their distribution range in Europe. *PLoS ONE* 13(5): e0196075. DOI: 10.1371/journal.pone.0196075.
- Kiorapostolou N., Galiano-Pérez L, von Arx G, Gessler A, **Petit G** (2018) Structural and anatomical responses of *Pinus sylvestris* and *Tilia platyphyllos* seedlings exposed to water shortage. *Trees, Structure and Function* 32: 1211-1218. DOI: 10.1007/s00468-018-1703-2.
- Kiorapostolou N, **Petit G** (2018) Similarities and differences in the balances between leaf, xylem and phloem structures in *Fraxinus ornus* along an environmental gradient. *Tree Physiology* 39: 234-242. DOI: 10.1093/treephys/tpy095.
- Pandey S, Carrer M, Castagneri D, **Petit G** (2018) Xylem anatomical responses to climate variability in Himalayan birch trees at one of the world's highest forest limit. *Perspectives in Plant Ecology, Evolution and Systematics* 33: 34-41. DOI: 10.1016/j.ppees.2018.05.004.
- <sup>√</sup>**Petit G**, von Arx G, Kiorapostolou N, Lechthaler S, Prendin AL, Anfodillo T, Caldeira MC, Cochard H, Copini P, Crivellaro A, Delzon S, Gebauer R, Gričar J, Grönlund L, Hölttä T, Jyske T, Lavrič M, Lintunen A, Lobo-do-Vale R, Peltoniemi M, Peters RL, Robert EMR, Roig Juan S, Senfeldr M, Steppe K, Urban J, Van Camp J & Sterck F (2018) Tree differences in primary and secondary growth drive convergent scaling in leaf area to sapwood area across Europe. *New Phytologist* 218: 1383– 1392. DOI: 10.1111/nph.15118.
- <sup>√1</sup>Prendin AL, Mayr S, Beikircher B, Von Arx G, **Petit, G** (2018) Xylem anatomical adjustments prioritize hydraulic efficiency over safety as Norway spruce trees grow taller. *Tree Physiology* 38: 1088-1097. DOI: 10.1093/treephys/tpy065.

<sup>√#2</sup>Prendin AL, **Petit G**, Fonti P, Rixen C, Dawes MA, von Arx G (2017) Axial xylem architecture of *Larix decidua* exposed to CO<sub>2</sub> enrichment and soil warming at the tree line. *Functional Ecology* 32: 273-287. DOI: 10.1111/1365-2435.12986.

2017

Carrer M, Castagneri D, Prendin AL, **Petit G**, von Arx G (2017). Retrospective analysis of wood anatomical traits reveals a recent extension in tree cambial activity in two high-elevation conifers. *Frontiers in Plant Science* 8: 1664-462X. DOI: 10.3389/fpls.2017.00737.

Nardini A, Savi T, Losso A, **Petit G**, PacilèS, Tromba G, Maggior S, Trifilò P, Lo Gullo MA & Salleo S (2017) X-ray microtomography observations of xylem embolism in stems of *Laurus nobilis* are consistent with hydraulic measurements of percentage loss of conductance. *New Phytologist* 213: 1068-1075. DOI: 10.1111/nph.14245.

Prendin AL, **Petit G**, Carrer M, Fonti P, Björklund J & von Arx G (2017) New research perspectives from a novel approach to quantify tracheid wall thickness. *Tree Physiology* 37: 976-983. DOI: 10.1093/treephys/tpx037.

2016

<sup>√#</sup>Anfodillo T, **Petit G**, Sterck F, Lechthaler S & Olson ME (2016) Allometric trajectories and “stress”: a quantitative approach. *Frontiers in Plant Science* 7: 1681. DOI: 10.3389/fpls.2016.01681.

Lintunen A, Paljakka T, Jyske T, Peltoniemi M, Sterck F, vonArx G, Cochard H, Copini P, Caldeira MC, Delzon S, Gebauer R, Grönlund L, Kiorapostolou N, Lechthaler S, Lobo-do-Vale R, Peters RL, **Petit G**, Prendin AL, Salmon Y, Steppe K, Urban J, Roig Juan S, Robert EMR & Hölttä T (2016) Osmolality and non-structural carbohydrate composition in the secondary phloem of trees across a latitudinal gradient in Europe. *Frontiers in Plant Science* 7: 726. DOI: 10.3389/fpls.2016.00726.

<sup>√3</sup>**Petit G**, Savi T, Consolini M, Anfodillo T & Nardini A (2016) Interplay of growth rate and xylem plasticity for optimal coordination of carbon and hydraulic economies in *Fraxinus ornus* trees. *Tree Physiology* 36: 1310-1319. DOI: 10.1093/treephys/tpw069.

2015

<sup>√4</sup>Carrer M, von Arx G, Castagneri D & **Petit G** (2015) Distilling allometric and environmental information from time series of conduit size: the standardization issue and its relationship to tree hydraulic architecture. *Tree Physiology* 35: 27-33. DOI: 10.1093/treephys/tpu108.

Castagneri D, **Petit G** & Carrer M. (2015) Divergent climate response on hydraulic-related xylem anatomical traits of *Picea abies* along a 900-m altitudinal gradient. *Tree Physiology* 35: 1378-1387 DOI: 10.1093/treephys/tpv085.

2014

<sup>√#</sup>Olson ME, Anfodillo T, Rosell JA, **Petit G**, Crivellaro A, Isnard S, León-Gómez C, Alvarado-Cárdenas LO & Castorena M (2014) Universal hydraulics of the flowering plants: vessel

diameter scales with stem length across angiosperm lineages, habits and climates. *Ecology Letters* 17: 988-997. DOI: 10.1111/ele.12302.

**Petit G** & Crivellaro A (2014) Comparative axial widening of phloem and xylem conduits in small woody plants. *Trees, Structure and Function* 28: 915-921. DOI: 10.1007/s00468-014-1006-1.

**Petit G**, DeClerck FAJ, Carrer M & Anfodillo T (2014) Axial vessel widening in arborescent monocots. *Tree Physiology* 34: 137-145. DOI: 10.1093/treephys/tpt118.

2013

Anfodillo T, Crivellaro A & **Petit G** (2013) Axial conduit widening in woody species: a still neglected anatomical pattern. *IWA Journal* 34: 352-364. DOI: 10.1163/22941932-00000030.

2012

Anfodillo T, Deslauriers A, Menardi R, Tedoldi L, **Petit G** & Rossi S. (2012) Widening of xylem conduits in a conifer tree depends on the longer time of cell expansion downwards along the stem. *Journal of Experimental Botany* 63: 837-845. DOI: 10.1093/jxb/err309.

Bettiati D, **Petit G** & Anfodillo T (2012) Testing the equi-resistance principle of the xylem transport system in a small ash tree: empirical support from anatomical analyses. *Tree Physiology* 32: 171177. DOI: 10.1093/treephys/tpr137.

2011

**Petit G** & Anfodillo T (2011) Comment on “The blind men and the elephant: the impact of context and scale in evaluating conflicts between plant hydraulic safety and efficiency” by Meinzer et al. (2010). *Oecologia* 165: 271-274. DOI: 10.1007/s00442-010-1871-2.

√ **Petit G**, Anfodillo T, Carraro V, Grani F & Carrer M (2011). Hydraulic constraints limit height growth in trees at high altitude. *New Phytologist* 189: 241-252. DOI: 10.1111/j.1469-8137.2010.03455.x.

2010

√ **Petit G**, Pfautsch S, Anfodillo T & Adams MA (2010). The challenge of tree height in *Eucalyptus regnans*: when xylem tapering overcomes hydraulic resistance. *New Phytologist* 187; 1146-1153. DOI: 10.1111/j.1469-8137.2010.03304.x.

2009

**Petit G** & Anfodillo T (2009) Plant physiology in theory and practice: An analysis of the WBE model for vascular plants. *Journal of Theoretical Biology* 259: 1-4. DOI: 10.1016/j.jtbi.2009.03.007.

**Petit G**, Anfodillo T & De Zan C (2009) Degree of tapering of xylem conduits in stems and roots of small *Pinus cembra* and *Larix decidua* trees. *Botany* 87: 501-508. DOI: 10.1139/B09-025.

2008

<sup>√</sup>**Petit G**, Anfodillo T & Mencuccini M (2008) Tapering of xylem conduits and hydraulic limitations in sycamore (*Acer pseudoplatanus*) trees. *New Phytologist* 177: 653-664. DOI: 10.1111/j.14698137.2007.02291.x.

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Mencuccini M, Hölttä T, **Petit G** & Magnani F (2007) Sanio's law revisited. Size-dependent changes in the xylem architecture of trees. *Ecology Letters* 10:1084-1093. DOI: 10.1111/j.1461-0248.2007.01104.x.

<sup>√</sup> Pubblicazioni presentate (12) ai fini della valutazione.

<sup>#</sup> Articolo in cui Gai Petit non compare come primo/ultimo autore o autore per corrispondenza, e per il quale il suo contributo specifico è riportato nella author contribution statement riportata all'interno della pubblicazione.

<sup>1</sup> Articolo oggetto di Commentary introduttivo per il volume/issue 38/8 (2018) di *Tree Physiology*:

Pittermann J & Olson ME (2018) Transport efficiency and cavitation resistance in developing shoots: a risk worth taking. *Tree Physiology* 38 (8): 1085-1087. DOI: 10.1093/treephys/tpy094.

<sup>2</sup> Articolo vincitore del premio "iForest" per il miglior articolo scientifico pubblicato negli anni 2017/2018 (attribuito ad Angela Luisa Prendin in qualità di giovane scienziata forestale).

<sup>3</sup> Articolo oggetto di Commentary introduttivo per il volume/issue 36/11 (2016) di *Tree Physiology*:

Sterck F & Zweifel R (2016) Trees maintain a similar conductance per leaf area through integrated responses in growth, allocation, architecture and anatomy. *Tree Physiology* 36 (11): 1307-1309. DOI: 10.1093/treephys/tpw069.

<sup>4</sup> Articolo della rivista *Tree Physiology* con il secondo maggior numero di citazioni (80, fonte Web of Science) a partire dal 2015.

#### **Articoli pubblicati in riviste non indicizzate ISI:**

Cochard H, **Petit G**, Torres-Ruiz J, Delzon S (2019) XIM4 meeting report, Sept. 25-27 2019, Padua (Italy): The hydraulic community has taken a step forward towards non-invasive measurements. *Journal of Plant Hydraulics* 6: e-002.

**Petit G** & Anfodillo T (2013) Widening of xylem conduits and its effect on the diurnal course of water potential gradients along leaf venations. *Acta Horticulturae* 991: 239-244.

**Petit G**, Anfodillo T & Mencuccini M (2009) The distribution of resistances along the hydraulic pathway is controlled by the tapering of xylem conduits. *Acta Horticulturae* 846: 237-242.

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