Siegfried Jahnke - publication list

Reviewed papers

2017

Pflugfelder D, Metzner R, van Dusschoten D, Reichel R, Jahnke S, Koller R (2017) Non-invasive imaging of plant roots in different soils using magnetic resonance imaging (MRI). Plant Methods 13, 102, https://doi.org/10.1186/s13007-017-0252-9

2016

van Dusschoten D, Metzner R, Kochs J, Postma JA, Pflugfelder D, Bühler J, Schurr U, **Jahnke S** (2016) Quantitative 3D analysis of plant roots growing in soil using magnetic resonance imaging. *Plant Physiology* 170, 1176-1188, doi: http://dx.doi.org/10.1104/pp.15.01388

Roussel J, Fischbach A, **Jahnke S**, Scharr H (2016) Surface reconstruction of plant seeds by volume carving: performance and accuracies. Frontiers in Plant Science **7**, 745. http://dx.doi.org/10.3389/fpls.2016.00745

Sydoruk VA, Fiorani F, **Jahnke S**, Krause HJ (2016) Design and charaterization of microwave cavity resonators for noninvasive monitoring of plant water distribution. *IEEE Transactions on Microwave Theory and Techniques*, 64, 1-11; [10.1109/TMTT.2016.2594218]

Jahnke S, Roussel J, Hombach T, Kochs J, Fischbach A, Huber G, Scharr H (2016) *pheno*Seeder – A robot system for automated handling and phenotyping of individual seeds. *Plant Physiology* 172, 1358-1370. http://doi:10.1104/pp.16.01122

2015

Bühler J, Rishmawi L, Pflugfelder D, Huber G, Scharr S, Hülskamp M, Koorneef M, Schurr U, **Jahnke S** (2015) phenoVein – A tool for leaf vein segmentation and analysis. *Plant Physiology* 169, 2359-2370. doi: http://dx.doi.org/10.1104/pp.15.00974

Metzner R, Eggert A, van Dusschoten D, Pflugfelder D, Gerth S, Schurr U, Uhlmann N, **Jahnke S** (2015) Direct comparison of MRI and X-ray CT technologies for 3D imaging of root systems in soil: potential and challenges for root trait quantification. *Plant Methods* 11, 17; http://doi:10.1186/s13007-015-0060-z

Schmittgen S, Metzner R, van Dusschoten D, Jansen M, Fiorani F, **Jahnke S**, Rascher U, Schurr, U (2015) Magnetic Resonance Imaging of sugar beet taproots in soil reveals growth reduction and morphological changes during foliar *Cercospora beticola* infestation. *Journal of Experimental Botany* 66, 5543-5553, http://doi:10.1093/jxb/erv109

Roussel J, Fischbach A, **Jahnke S**, Scharr H (2015) 3D Surface reconstruction of plant seeds by volume carving. In: Tsaftaris SA, Scharr H, and Pridmore T, editors, *Proceedings of the Computer Vision Problems in Plant Phenotyping (CVPPP)*, pp 7.1-7.13. BMVA Press, September 2015

2014

Metzner R, van Dusschoten D, Bühler J, Schurr U, **Jahnke S** (2014) Belowground plant development measured with magnetic resonance imaging (MRI): exploiting the potential for non-invasive trait quantification using sugar beet as a proxy. *Frontiers in Plant Science* 5, Article 469, 1-11 (doi: 10.3389/fpls.2014.00469)

2013

De Schepper V, Bühler J, Thorpe M, Roeb G, Huber G, van Dusschoten D, **Jahnke S**, Steppe K (2013) ^{11}C-PET imaging reveals transport dynamics and sectorial plasticity of oak phloem after girdling. *Frontiers in Plant Physiology* 4, 1-9

Faget M, Nagel KA, Walter A, Herrera JM, **Jahnke S**, Schurr U, Temperton VM (2013) Root–root interactions: extending our perspective to be more inclusive of the range of theories in ecology and agriculture using in-vivo analyses. *Annals of Botany* 112, 253-266 (doi: 10.1093/aob/mcs296)

Gleichenhagen M, Zimmermann BG, Herzig B, Janzik I, **Jahnke S**, Boner M, Stehle P, Galensa R (2013) Intrinsic isotopic C-13 labelling of polyphenols. *Food Chemistry* 141, 2582-2590

2012

De Schepper V, van Dusschoten D, Copini P, **Jahnke S**, Steppe K (2012) MRI links stem water content to stem diameter variations in transpiring trees. *Journal of Experimental Botany* **63**, 2645-2653 (doi:10.1093/jxb/err445)

Fiorani F, Rascher U, **Jahnke S**, Schurr U (2012) Imaging plant dynamics in heterogenic environments. *Current Opinion in Biotechnology* **23**, 227-235 (http://dx.doi.org/10.1016/j.copbio.2011.12.010)

Füllner K, Rist R, **Jahnke S**, Temperton VM, Rascher U, Schurr U, Kuhn AJ (2012) Vertical gradients in soil temperature stimulates development and increases biomass accumulation in barley. *Plant, Cell and Environment* **35**, 884-892 (doi: 10.1111/j.1365-3040.2011.02460.x)

2011

Rascher U, Blossfeld S, Fiorani F, **Jahnke S**, Jansen M, Kuhn AJ, Matsubara S, Märtin LLA, Merchant A, Metzner R, Müller-Linow M, Nagel KA, Pieruschka R, Pinto F, Schreiber CM, Temperton VM, Thorpe MR, van Dusschoten D, van Volkenburgh E, Windt CW, Schurr U (2011) Non-invasive approaches for phenotyping of enhanced performance traits in bean. *Functional Plant Biology* **38**, 968 – 983

2010

Pieruschka R, Chavarría-Krauser A, Schurr U, **Jahnke S** (2010) Photosynthesis in lightfleck areas of homobaric and heterobaric leaves. *Journal of Experimental Botany* **61**, 1031-1039 (doi: 10.1093/jxb/erp368)

Beer S, Streun M, Hombach T, Bühler J, **Jahnke S**, Khodaverdi M, Larue H, Minwuyelet S, Parl C, Roeb G, Schurr U, Ziemons K (2010) Design and initial performance of PlanTIS, a high resolution positron emission tomograph for plants. *Physics in Medicine and Biology* **55**, 635-646 (doi: 10.1088/0031-9155/55/3/006)

Beisel KG, **Jahnke S**, Hofmann D, Köppchen S, Schurr U, Matsubara S (2010) Continuous turnover of carotenes and chlorophyll a in mature leaves of *Arabidopsis thaliana* revealed by $^{14}CO_2$ pulse-chase labelling. *Plant Physiology* **152**, 2188-2199

Loukiala A, Tuna U, Beer S, **Jahnke S**, Ruotsalainen U (2010) Gap-filling methods for 3D PlanTIS data. *Physics in Medicine and Biology* **55**, 6125 (doi: 10.1088/0031-9155/55/20/006)

2009

Jahnke S, Pieruschka R (2009) Lateral gas diffusion inside leaves: a long neglected topic in plant physiology. *Nova Acta Leopoldina* NF **96,** 93-100

Menzel MI, Tittmann S, Bühler J, Preis S, Wolters N, **Jahnke S**, Walter A, Chlubek A, Leon A, Hermes N, Offenhäuser A, Gilmer F, Blümler P, Schurr U, Krause H-J (2009) Non-invasive biomass determination of plants using microwave resonators. *Plant, Cell and Environment* **32,** 368-379

Jahnke S, Menzel MI, van Dusschoten D, Roeb GW, Bühler J, Minwuyelet S, Blümler P, Temperton VM, Hombach T, Streun M, Beer S, Khodaverdi M, Ziemons K, Coenen HH, Schurr U (2009) Combined MRI-PET dissects dynamic changes in plant structures and functions. *The Plant Journal* **59,** 634-644 (DOI: 10.1111/j.1365-313X.2009.03888.x)

Nagel KA, Kastenholz B, **Jahnke S**, van Dusschoten D, Aach T, Mühlich M, Truhn D, Scharr H, Terjung S, Walter A, Schurr U (2009) Phenotyping temperature responses of root structure and function. *Functional Plant Biology* **36,** 947-959

2008

Pieruschka R, Chavarría-Krauser A, Cloos K, Scharr H, Schurr U, **Jahnke S** (2008) Photosynthesis can be enhanced by lateral CO_2 diffusion inside leaves over distances of several millimeters. *New Phytologist* **178**, 335-347

2006

Pieruschka R, Schurr U, Jensen M, Wolff WF, **Jahnke S** (2006). Lateral diffusion of CO_2 inside homobaric leaves from shaded to illuminated leaf parts affects photosynthesis inside homobaric leaves. *New Phytologist* **169**, 779-788

Jahnke S, Pieruschka R (2006) Air pressure in clamp-on leaf chambers – a neglected issue in gas exchange measurements. *Journal of Experimental Botany* **57**, 2553-2561

Schwachtje J, Minchin PEH, **Jahnke S**, van Dongen JT, Schittko U, Baldwin IT (2006) SNF1-related kinases allow plants to tolerate herbivory by allocating carbon to roots. *Proc.Nat.Acad. Sci.* **103**, 12935-12940

2005

Pieruschka R, Schurr U, **Jahnke S** (2005) Lateral gas diffusion inside leaves. *Journal of Experimental Botany* **56**, 857-864.

2002

Jahnke S, Krewitt M (2002) Atmospheric CO_2 concentration may directly affect leaf respiration measurement in tobacco, but not respiration itself. *Plant, Cell and Environment* **25**, 641-651

2001

Jahnke S (2001) Atmospheric CO_2 concentration does not directly affect leaf respiration in bean or poplar. *Plant, Cell and Environment* **24**, 1139-1151.

1998

Jahnke S, Schlesinger U, Feige GB, Knust EJ (1998) Transport of photoassimilates in young trees of *Fraxinus* and *Sorbus*: measurement of translocation in vivo. *Botanica Acta* **111**, 307-315.

1997

Grimm E, **Jahnke S**, Rothe K (1997) Photoassimilate translocation in the petiole of *Cyclamen* and *Primula* is independent of lateral retrieval. *Journal of Experimental Botany* **48**, 1087-1094.

1996

Grimm E, **Jahnke S** (1996) Assimilate movement along the phloem path is independent from the lateral retrieval. *Journal of Experimental Botany* **47**, 1303-1304.

1995

Grimm E, Grube A, **Jahnke S**, Neumann S (1995) Retention of xenobiotics along the phloem path. *Planta* **197**, 11-18.

1990

Feige GB, Niemann L, **Jahnke S** (1990) Lichens and mosses - silent chronists of the Chernobyl accident. *Bibliotheca Lichenologica* **38**, 63-77.

1989

Jahnke S, Bier D, Estruch JJ, Béltran JP (1989) Distribution of photoassimilates in the pea plant: chronology of events in non-fertilized ovaries and effects of gibberellic acid. *Planta* **180**, 53-60.

Jahnke S, Bier D, Lenk A, Feige GB (1989) In-vivo Messungen der Phloemtranslokation in Pflanzen. *Verhandlungen der Gesellschaft für Ökologie* **18**, 829-833.

Niemann L, **Jahnke S**, Feige GB (1989) Radioaktive Kontamination von Pflanzen und Boden nach dem Reaktorunfall in Tschernobyl. *Verhandlungen der Gesellschaft für Ökologie* **18**, 873-882.

1984

Grodzinski B, **Jahnke S**, Thompson R (1984) Translocation profiles of [^{11}C] and [^{13}N]-labelled metabolites after assimilation of $^{11}CO_2$ and [^{13}N]-labelled ammonia gas by leaves of *Helianthus annuus* L. and *Lupinus albus* L. *Journal of Experimental Botany* **35**, 678-690.

1981

Jahnke S, Stöcklin G, Willenbrink J (1981) Translocation profiles of ^{11}C-assimilates in the petiole of *Marsilea quadrifolia* L. *Planta* **153**, 56-63.

Book chapters

2013

Faget M, Bloßfeld S, **Jahnke S**, Huber G, Schurr U, Nagel K (2013) Temperature effects on root growth. In: *Plant Roots: The Hidden Half* (eds. A Eshel, T Beeckman), 4th Edition, CRC Press

2007

Roeb GW, **Jahnke S** (2007) Dynamic carbon allocation in wheat plants. In: *Sink-source Relationship and Plant Productivity* (ed Ron´zhina ES), pp 200-211. Kaliningrad Publishing House, Kaliningrad. (Proceedings of the International Symposium "Source-sink relationships in plants", May 21-26, 2007, Kaliningrad, Russia)

2001

Jahnke S, Proff B (2001) Gas exchange measurements on plants using LabVIEW. In: *Virtuelle Instrumente in der Praxis. Begleitband zum Kongress VIP 2001* (eds. R. Jamal & H. Jaschinski), pp. 52-57. Hüthig Verlag, Heidelberg, München.

Schurr U, **Jahnke S** (1991) Effects of water stresses and rapid changes in sink water potential on phloem transport in *Ricinus*. In: *Recent Advances in Phloem Transport and Assimilate Compartmentation* (eds. J.L. Bonnemain, S. Delrot, W.J. Lucas & J. Dainty), pp. 294-300. Ouest Editions, Nantes Cedex.

1997

Blechschmidt-Schneider S, Eschrich W, **Jahnke S** (1997) Storage and mobilization of carbohydrates and lipids. In: *Trees - Contributions to Modern Tree Physiology* (eds. H. Rennenberg, W. Eschrich & H. Ziegler), pp. 139-163. Backhuys Publishers, Leiden.

1995

Funke W, Feige GB, **Jahnke S**, Reidl K (1995) Bioindikatoren. In: *Handbuch zur Ökologie* (ed. W. Kuttler), pp. 60-68. Analytica Verlagsgesellschaft, Berlin.

Jahnke S, Feige GB (1995) Stickstoff Kreislauf. In: *Handbuch zur Ökologie* (ed. W. Kuttler), pp. 396-404. Analytica Verlagsgesellschaft, Berlin.

1986

Jahnke S, Cleemann L, Eberth J (1986) A position sensitive detector - a new tool for detecting short-lived isotopes in phloem translocation studies. In: *Short-lived Isotopes in Biology* (ed. P.E.H. Minchin), pp. 54-56. DSIR Science Information Publishing Centre, Wellington, New Zealand.