Sunday, 2 June 2024	
Time / Room	Foyer Leipziger KUBUS
17:00	**Registration**
18:00	**Get Together**
	Hall 1
19:00	**Life Time Award** Chair: Doris Vetterlein
	Laudatory speech on Peter Gregory held by Timothy George Lecture by the laureate: Peter Gregory *Employing roots effectively for societal well-being*
	Foyer Leipziger KUBUS
20:00	**Get Together continued**

Monday, 3 June 2024

Time / Room	Hall 1		
09:00	**Welcome**		
09:15	**Plenary Lecture 1** On roots and carbon *Feike Dijkstra, University of Sydney, Australia* — *Chair: Eva Oburger*		
10:00	**Plenary Lecture 2** *Are we rooting for the right Interface? Understanding and Modeling the Soil-Root contact* *Mathieu Javaux, Université Catholique de Louvain, Belgium/Germany* — *Chair: Eva Oburger*		
10:45	Coffee Break		
	Hall 1 AB	Hall 1 CD	Hall 2
	Session 1.2_A *Chair: Michael Santangeli*	**Session 1.3_A** *Chair: Mutez Ahmed*	**Session 1.1_A** *Chair: Larry York*
11:15	**Session Keynote** In situ quantification of the Net C Rhizodeposition in a Mediterranean agroforestry alley cropping system *Jeremy Detrey[1]; Isabelle Bertrand[1]; Jim Rasmussen[2]; Gabin Piton[1]* *[1]INRAE, France; [2]Aarhus University, DK*	**Session Keynote** The benefit of multiseriate cortical sclerenchyma for drought stress tolerance depends on the environment and expression of other root traits *Hannah Schneider[1]; Francisco Pinto[2]; Matthew Reynolds[3]; Jacinta Gimeno Romeu[3]; Lynch Jonathan[4]; Cody Depew[4]* *[1]Leibniz Institute of Plant Genetics and Crop Plant Research (IPK); [2]Wageningen University & Research; [3]International Maize and Wheat Improvement Center (CIMMYT); [4]Pennsylvania State University*	**Session Keynote** Can we use X-ray CT to generate 3D penetration resistance data and unravel the impact of local soil strength on root growth? *Maxime Phalempin[1]; Ulla Rosskopf[2]; Steffen Schlüter[1]; Doris Vetterlein[1]; Stephan Peth[2]* *[1] Helmholtz Centre for Environmental Research- UFZ; [2]Leibnitz Universität Hannover*
11:45	Increased C input from maize roots to the soil is offset by accelerated organic matter decomposition through priming. *Khatab Abdalla; Johanna Pausch* *University of Bayreuth, Germany*	New hypergravitropic root mutants from the barley TILLMore collection *Giuseppe Sangiorgi; Silvio Pierbattista; Francesco Camerlengo; Cristian Forestan; Roberto Tuberosa; Silvio Salvi* *University of Bologna*	How do increased soil compaction and differences in root-soil contact affect root gene expression and diversity of plant beneficial microorganisms? *Mika Tarkka; Maxime Phalempin; Eva Lippold; Marie-Lara Bouffaud; Steffen Schlüter; Doris Vetterlein; Henrike Würsig* *Helmholtz - Centre for Environmental Research - UFZ*

12:00	Can we measure in situ root decomposition kinetics with optical scanner? *Lorène Siegwart[1]; Isabelle Bertrand; Christophe Jourdan; Garynechele Saimpha* *[1] University of Copenhagen, Denmark*	Root temporal transcriptional response to heterogeneous water availability in *Zea mays L.* *Xuelian Li[1]; Virginia Protto; Christophe Maurel; Philippe Nacry* *[1] Institute for Plant Sciences of Montpellier (IPSiM)*	Can increased cover crop diversity improve root soil binding capacity in the field and restore agroecosystems? *Cristina McBride-Serrano[1]; Ian Dodd[1]; John Quinton[1]; Alison Karley[2]; Timothy George[2]* *[1]Lancaster University; [2]James Hutton Institute*
12:15	In situ quantification of plant carbon allocation to maize roots in a maize-AMF system *Kong Wong[1]; Keith Duncan[1]; Sergey Komarov[2]; Dierdra Daniels[3]; Clara Lebow[1]; Daniela Floss[3]; Yuan-Chuan Tai[2]; Christopher Topp[1]* *[1]Donald Danforth Plant Science Center; [2]Washington University in St. Louis; [3]Valent Biosciences*	Unified multi-scale description of soil-root water flows to disentangle cross-scale hydraulic effects *Martin Bouda[1]; Jan Vanderborght[2]; Valentin Couvreur[3]; Vaclav Sipek[1]; Mathieu Javaux[3]* *[1]Czech Academy of Sciences; [2]Forschungszentrum Juelich/IBG-3; [3]Universite Catholique de Louvain*	Leveraging root genetics in maize and cover crops to develop more productive agro-ecosytems that foster soil health and carbon storage *Christopher Topp[1];Cody Bagnall;Ivan Baxter; Marcus Griffiths; Alexander Liu; Kong Wong* *[1]Donald Danforth Plant Science Center*
12:30	Controls of atmospheric carbon transfer to soil by root exudates *Melanie Brunn* *University of Koblenz*	Defoliation pauses root penetration of wheat for 20 days *Eusun Han[1]; John A. Kirkegaard[2]; Kristian Thorup-Kristensen[3]* *[1]Aarhus University; [2]CSIRO (Commonwealth Scientific and Industrial Research Organisation); [3]University of Copenhagen*	Pore scale modeling of the mutual influence of roots and soil aggregation in the rhizosphere *Alexander Prechtel[1]; Maximilian Rötzer[1];Nadja Ray[2]* *[1] Friedrich-Alexander University Erlangen-Nürnberg; [2] Katholische Universität Eichstätt-Ingolstadt*
12:45	Lunch Break		
	Hall 1 AB	Hall 1 CD	Hall 2
	Session 1.2_B *Chair: Hannah Schneider.*	**Session 1.3_B** *Chair: Peng Yu*	**Session 1.1_B** *Chair: Patrick Bienert*
14:00	**Session Keynote** Root exudation in response to phosphorus limitation in upland rice *Christiana Staudinger[1]; Eva Mundschenk; Vera Benyr; Maire Holz; Uxue Otxandorrena; Jun Wasaki; Matthias Wissuwa; Eva Oburger* *[1] University of Natural Resources and Life Sciences (BOKU), Austria*	**Session Keynote** Exploring the Molecular Basis of Maize Nodal Root Growth Maintenance during Drought: An Omics Perspective *Akanksha Pareek ; Hallie J. Thompson; Amelia E. Griffith; Priyamvada Voothuluru ; Prof Melvin J. Oliver ; Robert E. Sharp ; Felix B. Fritschi* *University of Missouri – Columbia*	**Session Keynote** Cluster roots of *Hakea laurina* up-regulated a malate transporter HalALMT1 under P deficiency, which was activated by aluminum exposure *Hirotsuna Yamada[1]; Lydia Ratna Bunthara[1]; Akira Tanaka[2]; Takuro Kohama[3]; Hayato Maruyama[4]; Wakana Tanaka[1]; Sho Nishida[5]; Takayuki Sasaki[6]; Jun Wasaki[7]* *[1] Graduate School of Integrated Sciences for Life/ Hiroshima University; [2] Saga University; [3] School of Integrated Arts and Sciences; [4] Hokkaido University; [5] Saga University [6] Okayama University; [7] Hiroshima Univ.*
	Foyer		

14:30	**Postersession 1: Topic 1.1, 1.2, 1.3**		
15:30	Coffee Break		
	Hall 1 AB	Hall 1 CD	Hall 2
	Session 1.2_C *Chair: Philippe Hinsinger*	**Session 1.3_C** *Chair: Mathieu Javaux*	**Session 1.1_C** *Chair: Maxime Phalempin*
16:00	**Session Keynote** Micronutrient deficiency-dependent phytosiderophore dynamics in plant–soil systems *Andreea Spiridon[1]; David Aleksza[1]; Tim Causon[2]; Stephan Hann[2]; Nicolas Kratena[3]; Christian Stanetty[3]; Eva Oburger[1]* *[1/2]University of Natural Resources and Life Sciences (BOKU) Vienna; [3] Vienna University of Technology*	**Session Keynote** The effect of root hairs on root water uptake *Patrick Duddek[1]; Mutez Ali Ahmed[2]; Mathieu Javaux[3]; Jan Vanderborght[3]; Goran Lovric[4]; Andrew King[5]; Andrea Carminati[1]* *[1] ETH Zurich; [2] TU Munich; [3] Forschungszentrum Juelich/IBG-3; [4] Swiss Light Source, Paul Scherrer Institute; [5] Synchotron SOLEIL*	**Session Keynote** Mangrove species found in contrasting environments show differing phytohormonal responses to variation in soil bulk density *Anne Ola; Ian C. Dodd; Catherine E. Lovelock*
16:30	Effect of Maize Mucilage on Soil Nutrient Transport Bahareh Hosseini[1]; Meysam Cheraghi[2]; Maire Holz[3]; Mohsen Zarebanadkouki[1] *[1]Technical University of Munich; [2]University of Tehran; [3]Leibniz Centre for Agricultural Landscape Research (ZALF)*	Targeting root traits to improve tolerance to vegetative drought episodes in pearl millet (*Pennisetum glaucum L.*) *Pablo Affortit[1]; Awa Faye[2]; Dylan Jones[3]; Ezenwoko Benson[3]; James Burridge[1]; Bassirou Sine[2]; Sebastian Arenas-Jimenez[1]; Princia Nakombo-Gbassault[1]; Rahul Bhosale[3]; Tony Pridmore[3]; Vincent Vadez[1]; Ndjido Kane[2]; Malcolm Bennett[3]; Laurent Laplaze[4]; Darren Wells[3]; Jonathan Atkinson[3]; Alexandre Grondin[1]* *[1]IRD; [2]ISRA; [3]University of Nottingham; [4]Institut de Recherche pour le Développement*	Fine root biomass dynamics along soil hydrological gradients: from drained peatland forests to restored peatlands *Ivika Ostonen; Gristin Rohula-Okunev; Martin Maddison; Ain Kull* *University of Tartu*
16:45	The root collaboration gradient predicts soil metabolome-mediated plant-soil feedbacks *Benjamin Delory [1];Simone Cesarz[2];Marina Semchenko[3]* *[1]Utrecht University; [2]German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig; [3]University of Tartu*	Functional-Structural Plant Modeling Based on Experimental Data Reveals that Soil Phosphorus Status Influences Root System Conductance *Felix Maximilian Bauer[1]; Guillaume Lobet[1]; Dirk Norbert Helmrich[2]; Mona Giraud[1]; Andrea Schnepf[1]* *[1]Forschungszentrum Jülich, IBG-3: Agrosphere; [2]University of Iceland, Reykjavík, Iceland*	Ploidy alters root anatomy and shapes the evolution of crop polyploids *Jagdeep Singh Sidhu* *The Pennsylvania State University*
17:00	Modelling carbon and nitrogen exchanges at the soil-root interface: from local exchanges to whole-plant architectured growth	Rootstock mediation of scion transpiration response to evaporative demand? *Vasileios Giannakopoulos[1]; Will Harris[1]; Milan Urban[2]; Ian Dodd[1]* *[1]Lancaster University; [2]CIAT*	The biomechanics of path of least resistance of roots in heterogeneous substrates *Jiaojiao Yao[1]; Jonathan Barès[2]; Evelyne Kolb[3]; Lionel Dupuy[4]* *[1]Université PSL, Sorbonne Université, Université Paris Cité, France / University of the Basque Country, Spain /*

	Tristan Gérault[1]; Romain Barillot[2]; Christophe Pradal[3]; Marion Gauthier[4]; Céline Richard-Molard[1]; Bruno Andrieu[1]; Alexandra Jullien[1]; Frédéric Rees[1] *[1]INRAE - AgroParisTech, Université Paris-Saclay; [2]INRAE; [3]Univ. Montpellier; [4]L'Institut Agro*		*Neiker, Spain; [2]Université de Montpellier, France; [3]Université PSL, Sorbonne Université, Université Paris Cité, France; [4]Neiker and Ikerbasque, Basque Foundation for Science, Spain*
17:15	The influence of iron plaque and root traits on organic carbon cycling in the rice root detritusphere *Sara Martinengo; Maria Sofia Lasagna; Alexine Ehlinger; Maria Martin; Luisella Celi; Daniel Said Pullicino* *University of Torino*	Mucilage facilitates root water uptake under drought *Mohanned Abdalla ; Mutez Ahmed* *Technical University Munich*	Nutritropism and its mechanism *Kiyoshi Yamazaki[1]; Nashir Uddin[1]; Yoshihiro Ohmori[1]; Hirokazu Takahashi[2]; Atsushi Toyoda[3]; Yutaka Sato[3]; Mikio Nakazono[2]; Toru Fujiwara[1]* *[1] Univ. Tokyo; [2] Nagoya University; [3] National Institute of Genetics*

Tuesday, 4 June 2024

Time / Room	Hall 1		
09:00	**Plenary Lecture 3** Going underground: How root-microbe interactions affect ecosystem functioning under climate change *Franciska de Vries, University of Amsterdam, The Netherlands* — *Chair: Mika Tarkka*		
09:45	**Plenary Lecture 4** *How does root biology fit into a rice breeding program?* *Amelia Henry, International Rice Research Institute (IRRI), Philippines* — *Chair: Mika Tarkka*		
10:30	Coffee Break		
	Hall 1 AB	Hall 1 CD	Hall 2
	Session 1.5_A *Chair: Matthias Wissuwa*	**Session 1.4_A** *Chair: Claudia Knief*	**Session 1.6_A** *Chair: Chris Topp*
11:00	**Session Keynote** Enhanced root traits plasticity doesn't guarantee greater competitiveness in wild durum wheat ancestors compared to modern varieties *Florian Fort* *L'Institut Agro Montpellier*	**Session Keynote** Adaptive signature and genetic basis of root development and microbiome assemblage *Peng Yu[1]; Ruairidh Sawers[2]; Xinping Chen[3]; Jochen Reif[4]; Frank Hochholdinger[1]; Tianyu Wang[5]* *[1]INRES, University of Bonn; [2]Penn State University; [3]Southwest University; [4]IPK Gatersleben; [5]Chinese Academy of Agricultural Sciences*	**Session Keynote** Exploring the secrets of hyphosphere of arbuscular mycorrhizal fungi: processes and ecological functions *Gu Feng[1], Tim George[2]* *[1]China Agricultural University (CAU), [2]The James Hutton Institute*
11:30	Genetic control of root adaptive plasticity in pearl millet *Alexandre Grondin [1]; Sebastian Arenas-Jimenez[1]; Princia Nakombo-Gbassault[1]; Pablo Affortit[1]; Bassirou Sine[2]; Vincent Segura[3]; Hannah Schneider[4]; Philippe Cubry[1]; Laurent Laplaze* *[1] UMR DIADE; [2] CERAAS; [3] UMR AGAP Institut; [4] Leibniz Institute for Plant Genetics and Crop Plant Research (IPK)*	Synergistic effects of root associated mycorrhizal fungi and green compost on tomato growth and salt stress tolerance *Soumaya Zaidi; Mohammad-Reza Hajirezaei* *Leibniz Institute of Plant Genetics and Crop Plant Research (IPK)*	Developing a Rhizosphere Metabolite Atlas for Understanding the Roles of Root-Microbe Interactions in Plant Responses to Drought Amir H. Ahkami[1]; Jayde Aufrecht[1]; Kevin J Zemaitis[1]; Dusan Velickovic; Daisy Herrera[1]; Tanya Winkler[1]; Cayden Perdue[1]; Sneha Couvillion[1]; Vimal Kumar Balasubramanian[1]; Sharon L. Doty[2] *[1] Pacific Northwest National Laboratory; [2] University of Washington*
11:45	Genetic and molecular dissection of root system architecture in maize	How does the combination of root-contrasted phenotypes influence the microbial community and nutrient flow under different water regimes?	The impact of soil structure and EPS content on water retention and liquid connectivity in the rhizosphere

	Lixing Yuan; Zheng Zhao *College of Resources and Environmental Sciences, China Agricultural University (CAU)*	*Adrian Lattacher[1]; Samuel Le Gall[2]; Chao Gao[1]; Moritz Harings[2]; Ahmet Sircan[1]; Youri Rothfuss[2]; Ellen Kandeler[1]; Christian Poll[1]* *[1]University of Hohenheim; [2]Forschungszentrum Juelich*	*Pascal Benard[1]; Patrick Duddek[1]; Norbert Kirchgessner[2]; Florian Stoll[1]; Goran Lovric[3]; Laura Waldner[1]; Andrea Carminati[1]* *[1] ETH Zurich; [2] Crop Science, ETH Zurich; [3] Swiss Light Source, Paul Scherrer Institute*
12:00	Neighbour-Induced Alterations in Root Exudate Composition of Cover Crops: Buckwheat and Black Oat and their Impact on Redroot Pigweed *Cagla Eroglu[1]; Alexandra Bennett[2]; Teresa Mairinger[2]; Judith Wirth[1]; Stefan Hann[2]; Aurelie Gfeller[1]* *[1] Agroscope, Switzerland; [2] BOKU, University of Natural Resources and Life Sciences Vienna*	Dry – moist – dry: alterations of maize root gene expression and microbiome feedback processes in the field over three years *Henrike Würsig[1]; Bunlong Yim[2]; Maria Martin Roldan[1]; Negar Ghaderi[1]; Marie-Lara Bouffaud[1]; Susanne Schreiter[1]; Eva Lippold[1]; Doris Vetterlein[1]; Evgenia Blagodatskaya[1]; Kornelia Smalla[2]; Mika Tapio Tarkka[11] UFZ Halle, Germany; [2] Julius Kuehn-Institute (JKI), Federal Research Institute for Cultivated Plants, Braunschweig*	Utilization of maize rhizodeposition by the microbiome in an agricultural soil *Daniela Niedeggen[1], Lioba Rüger[1], Eva Oburger[2], Michael Santangeli[2], Ahmed Mutez[3], Doris Vetterlein[4], Sergey Blagodatsky[1], Michael Bonkowski[1]* *[1]University of Cologne, Germany; [2] University of Natural Resources and Life Sciences, Austria; [3] Technical University Munich, Germany; [4] UFZ - Helmholtz-Zentrum für Umweltforschung, Germany*
12:15	How does belowground facilitation drive overyielding via root-root interaction? *Rui-Peng Yu[1]; Ran An[1]; Ye Su[1]; Hans Lambers[2]; Jasper van Ruijven[3]; Long Li[1]* *[1] China Agricultural University; [2] University of Western Australia; [3] Wageningen University & Research*	*Belowground traits and crop performance under stress in field-grown durum wheat mixtures* *Elisa Taschen [1]; Esther Guillot [1]; Damien Dezette[1]; Erwan Kerbiriou[1]; Florian Fort [2]; Hélène Fréville[1]; Philippe Hinsinger[1]* *[1] INRAE, [2] University of Montpellier*	Engineering root/rhizosphere interactions for improving nutrient-use efficiency and crop productivity in intensive cropping systems *Jianbo Shen [1]; Jie Xu; Maoying Wang; Liyang Wang; Jingying Jing; Lingyun Cheng [2]; Fusuo Zhang* *[1] China Agricultural University; [2] China*
12:30	Lunch Break		
	Hall 1 AB	Hall 1 CD	Hall 2
	Session 1.5_B *Chair: Benjamin Delory*	**Session 1.4_B** *Chair: Cheng Lingyun*	**Session 1.6_B** *Chair: Feike Dijkstra*
14:00	**Session Keynote** Root trait variation along a Swedish sub-arctic tundra elevational gradient *Clydecia Spitzer[1]; Paul Kardol; Maja Sundqvist; Michael Gundale; David Wardle[2]* *[1]Swedish University of Agricultural Sceinces; [2] Umeå University*	**Session Keynote** Short-scale soil heterogeneity impacts mycorrhizal response traits in roots of 23 maize genotypes across a long-term P-fertilizer trial *Lidia Campos Soriano[1]; Elisa Taschen[2]; Didier Arnal[2]; Damien Dezette[2]; Silvio Salvi[3]; Blanca San Segundo[1]; Philippe Hinsinger[2]* *[1]CRAG; [2]INRAE; [3]Universita di Bologna*	**Session Keynote** Combining an ^{11}C and ^{13}C labelling approach to track photosynthates into the root system and rhizosphere microbiota of maize *Robert Koller; Sina Schultes[1]; Carsten Hinz; Ralf Metzner; Daniel Pflugfelder; Antonia Chlubek; Dagmar van Dusschoten; Gregor Huber; Sara Bauke; Michele Watt; Michael Bonkowski; Claudia Knief[1]* *[1]University of Bonn*
	Foyer		
14:30	**Postersession 2: Topic 1.5, 1.6**		

15:30	Coffee Break		
	Hall 1 AB	Hall 1 CD	Hall 2
	Session 1.5_C *Chair: Ian Dodd*	**Session 1.4_C** *Chair: Franciska de Vries.*	**Session 1.6_C** *Chair: Fang-Jie Zhao*
16:00	**Session Keynote** Deciphering regulatory networks controlling xylem plasticity under drought *Syed Adeel Zafar; Alex Borowsky; Julia Bailey-Serres* *University of California, Riverside*	**Session Keynote** Interactions of root anatomical and architectural phenotypes with root microbiomes in maize under low nitrogen fertilization *Tania Galindo[1]; Elena Kost; Elias Barmettler; Elena Giuliano; Rafaela Feola Conz; Johan Six[1]; Martin Hartmann[1]* *[1]ETH (Zurich)*	**Session Keynote** Deciphering microbial relationships with functionally discrete fine roots *William King[1]; Suzanne Fleishman[2]; Michela Centinari[2]; David Eissenstat[2]; Marc Goebel[3]; Taryn Bauerle[3]; Young-Mo Kim[4]; Christopher Anderton[4]; Terrence Bell[5]* *[1]University of Southampton; [2]The Pennsylvania State University; [3]Cornell University; [4]Pacific Northwest National Laboratory; [5]University of Toronto Scarborough*
16:30	Does future climate create asynchrony in above- and belowground phenology of Norway spruce? *Marili Sell ; Priit Kupper; Gristin Rohula-Okunev; Ivika Ostonen* *University of Tartu*	Root functional strategies are important determinants of the functional composition of soil fungal communities *Justus Hennecke; Alexandra Weigelt* *Leipzig University / German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig*	Chemical gradients in the rhizosphere: Too patchy for effective modelling? *Eva Lippold[1]; Magdalena Landl[2]; Eric Braatz[1]; Steffen Schlüter[1]; Rüdiger Kilian[3]; Robert Mikutta[3]; Andrea Schnepf[2]; Doris Vetterlein[1]* *[1] UFZ; [2] Forschungszentrum Juelich GmbH; [3] Martin Luther University Halle-Wittenberg, Halle (Saale)*
16:45	Regional variation in spring root growth of *Abies sachalinensis* seedlings associated with provenance snow environments *Tetsuto Sugai[1]; Keita Arakawa[2]; Wataru Ishizuka[3]* *[1]Forestry and Forest Product Institute; [2]Hokkaido University; [3]Hokkaido Research Organization*	Traits that enhance the effectiveness of biological nitrification inhibitors at increasing plant N uptake *Christian Kuppe; Johannes Postma* *Forschungszentrum Jülich GmbH*	Spatiotemporal patterns of iron and arsenic enrichment in rice rhizosphere under different soil sulfate levels and water regimes *Xu Fang[1]; Simin Li[2]; Iso Christl[1]; Ruben Kretzschmar[1]* *[1]ETH Zürich; [2]Chinese Academy of Sciences*
17:00	The acclimative value of root trait plasticity and elasticity for the plant energy balance – A theoretical perspective *Tino Colombi[1]; Bipin K Pandey[2]; Aakash Chawade[3]; Malcolm J. Bennett[2]; Sacha J Mooney[4]; Thomas Keller[1]* *[1]Swedish University of Agricultural Sceinces; [2] University of Nottingham; [3]Swedish University of Agricultural Sciences; [4]University of Nottingham*	Screening historic wheat cultivars for functional root traits to enhance nitrogen use efficiency *Maria Hernandez-Soriano[1]; Alberto Acedo[2]; Francisco Ossandon[2]; Acacia Simpson[1]; Luzie Wingen[1]; Simon Griffiths[1]; Tony Miller[1]* *[1]John Innes Centre; [2]Biome Makers*	Monitoring changes of O_2 and N_2O concentrations in the rhizosphere of young maize plants by combining O_2 optodes and N_2O microsensors *Pauline Sophie Rummel[1]; Martin Reinhard Rasmussen[2]; Theresa Merl[2]; Tomke S. Wacker[3]; Klaus Koren[2]; Per Ambus[1]; Carsten W. Mueller[4]*

			[1] University of Copenhagen, Denmark; [2] Aarhus University, Denmark; [3] University of Copenhagen, Denmark; [4] Technical University of Berlin, Germany
17:15	Nitric oxide signaling mediated by the bzip transcription factor family regulates root stem cell niche identity *Alvaro Sanchez Corrionero[1]; Sara Gómez-Jiménez Candidate[2]; Capilla Mata-Pérez[2]; Oscar Lorenz* *[1]Universidad Politécnica de Madrid (UPM), Spain; [2]University of Salamanca; [2] University of Salamanca*	Root microbiome composition under field conditions: Landraces of *Zea mays L.* respond stronger to reduced precipitation than modern varieties *Nicolas Tyborski[1]; Tina Koehler[2]; Franziska Steiner[2]; Shu-Yin Tung[3]; Andreas J. Wild[1]; Andrea Carminati[4]; Carsten W. Mueller[5]; Alix Vidal[6]; Sebastian Wolfrum[3]; Johanna Pausch[1]; Tillmann Lueders[1]* *[1]University of Bayreuth; [2]Technical University of Munich; [3]Bavarian State Research Center for Agriculture (LfL); [4]ETH Zurich; [5]Technical University of Berlin; [6]Wageningen University & Research*	Boron efficiency mechanisms and how roots respond to boron deficiency stress *Thomas Alcock[1]; Désirée Bienert[1]; Astrid Junker[2]; Michael Melzer[2]; Rhonda Meyer[2]; Nico von Wirén[2]; Thomas Altmann[2]; Patrick Bienert[1]* *[1]Technical University of Munich (TUM); [2]Leibniz Institute of Plant Genetics and Crop Plant Research (IPK)*
19:00	**Meet the editor in the brewery and beer garden "Bayerischer Bahnhof"**		

Wednesday, 5 June 2024

Time / Room	Hall 1		
09:00	**Plenary Lecture 5** Soil or roots? What imposes the main limit to plant water use? *Tim Brodribb, University of Tasmania, Australia* — *Chair: Andrea Carminati*		
09:45	**Plenary Lecture 6** Lessons from five years of interdisciplinary research - Rhizosphere spatiotemporal organisation - A key to rhizosphere function *Doris Vetterlein, Helmholtz Centre for Environmental Research (UFZ), Germany* — *Chair: Andrea Carminati*		
10:30	Coffee Break		
	Hall 1 AB	Hall 1 CD	Hall 2
	Session 1.5_D *Chair: Amelia Henry*	**Session 1.3_D** *Chair: Malcolm Bennett*	**Session 1.4_D** *Chair: Eusun Han*
11:00	**Session Keynote** Genomic structural variation underlies differential root responses to nitrogen stress in maize *Stephanie Klein ; Bimala Acharya; Kaitlin Higgins; Anna Rowzee; Ella Townsend; Conner Valentine; Sarah Anderson* *Iowa State University*	**Session Keynote** A « hydro-reporter » to unravel the early perception of water deficit in roots *Yann Boursiac; Yunji Huang* *INRAE (Institut national de la recherche agronomique)*	Dynamic interactions of bacterial ACC deaminase trait with plant root exudates *Ajay Sorty[1]; Fani Ntana[2]; Martin Hansen[1]; Peter Stougaard[1]* *[1]Aarhus University, Dep. Environ. Science; [2]Bactolife ACS*
11:30	Tracking dynamic root responses to nitrogen in barley with an automated rhizotron platform *Ricardo Giehl[1]; Klaus Oldach[2]; Narendra Narisetti[1]; Thorsten Schnurbusch[1]; Martin Mascher[1]; Evgeny Gladilin[1]; Kerstin Neumann[1]; Thomas Altmann[1]; Nicolaus von Wirén[1]* *[1]Leibniz Institute of Plant Genetics and Crop Plant Research (IPK); [2]KWS LOCHOW GMBH*	Root hairs soften the drop in leaf water potential in field grown maize at high vapor pressure deficit even in wet soils *Florian Stoll; Osman Mustafa; Andrea Carminati; Mathieu Javaux; Asegidew Akale; Jan Vanderborght; Mutez Ahmed*	High enrichment and expression of NCRs promote bacteroid differentiation and nitrogen-fixing ability of Vicia villosa Roth *Yingzhi Gao; Jian Ren* *Northeast Normal University, China*
11:45	Fate of root uptaken citrate in tomato plants suffering phosphorus and iron deficiency	Exploring how plant-growth promoting bacteria colonise the rhizosphere during episodic watering	Wheat lines differing in yield, root architecture and mucilage secretion show associated changes in rhizosheath microbiome composition *Eric Ober; Emily Marr; Greg Deakin*

	Fabio Trevisan[1]; Raphael Tiziani[1]; Ondˇrej Hodek[2]; Thomas Moritz[3]; Sandra Jämtgård[4]; Stefano Cesco[1]; Tanja Mimmo[5] *[1]Free University of Bolzano; [2] Swedish University of Agricultural Sciences; [3]Swedish University of Agricultural Sciences, & University of Copenhagen; [4]Swedish University of Agricultural Sciences; [5]Free University of Bolzano*	*Vicky Waymouth[1]; Douglas Brumley[1]; Jacob Calabria[1]; Hugo Watson[1]; Sneha Rajackal Senthil Vel[1]; Berit Ebert[2]; Michelle Watt[1]* *[1]University of Melbourne; [2]Ruhr University Bochum*	*NIAB*
12:00	Soil phosphorus and water distribution interact with root architecture: trade-offs and interactions in complex environments *Frederik van der Bom[1]; Alwyn Williams[2]; Nelly Raymond[1]; Mike Bell[2]* *[1]Copenhagen University; [2]The University of Queensland*	Root exudates help to rewet dry soil and may improve water uptake performance in certain environmental conditions *Emma Gomez Peral[1]; Andrew Mair[1]; Iker Martin Sanchez[1]; Mariya Ptashnyk[2]; Lionel Dupuy[1]* *[1]NEIKER; [2]Heriot-Watt University*	Exploring host-mediated microbiome engineering (HMME) for enhanced crop resilience. *Elena Gallina; Marcel Bucher; Isabelle Elisabeth Metzen Biocenter, University of Cologne*
12:15	Dynamic lateral root response to local phosphorus distribution improves phosphorus acquisition by wheat *Takuya Koyama[1]; Masaaki Hashimoto; Hiromitsu Aoki; Shun Murakami* *[1]Utsunomiya University*	Increasing yield stability in wheat (*Triticum aestivum L.*) through genetic improvement of root systems *Anya Heathcote[1]; Charlotte Rambla[2]; Samir Alahmad[2]; Hannah Robinson[2]; Lee Hickey[2]; Julia Davies[3]; Eric Ober[1]* [1]NIAB; [2]Queensland Alliance for Agriculture and Food Innovation; [3]University of Cambridge	Decoding the impact of novel urease inhibitors on wheat-microbe interactions via Multi-Omics *Heber Dias de Oliveira[1]; Sneha Gupta[2]; Benjamin Andrikopoulos[2]; Uta Wille[2]; Ulrike Mathesius[3]; Ute Roessner[3]* *[1]The University of Melbourne and the Australian National University; [2]The University of Melbourne; [3]Australian National University*
12:30	Lunch Break		
13:30	**Field Trip to Bad Lauchstädt** *Bus shuttle from UFZ to Bad Lauchstädt*		
14:00	**Guided City Walk** *Meeting Point: Mendebrunnen at Augustusplatz in the City Center*		
19:30	**Conference Dinner at Moritzbastei**		

Thursday 6 June 2024

Time / Room	Hall 1		
09:00	**Plenary Lecture 7** Uncovering how roots sense soil stresses using hormone signals *Malcom Bennett, University of Nottingham, UK* — *Chair: Andrea Schnepf*		
09:45	**Plenary Lecture 8** *Mechanisms of heavy metal uptake, detoxification and how roots avoid heavy metal stress* *Fang-Jie Zhao, Nanjing Agricultural University, China* — *Chair: Andrea Schnepf*		
10:30	Coffee Break		
	Hall 1 AB	Hall 1 CD	Hall 2
	Session 2.3_A *Chair: Kristian Thorup-Kristensen*	**Session 2.4_A** *Chair: Jianbo Shen*	**Session 2.1_A** *Chair: Charlotte White*
11:00	**Session Keynote** Adapting rice to climate change: Root traits for rapid seedling establishment and drought recovery *Matthias Wissuwa[1]; Lukas Krusenbaum[1]; Lam Thi Dinh[2]* *[1]University of Bonn; [2]Hirosaki University, Japan*	**Session Keynote** Phosphorus cycling in rice systems: unravelling rhizospheric processes *Sara Martinengo[1]; Maria Martin[1]; Angelia Seyfferth[2]; Daniel Said-Pullicino[1]; Luisella Celi[1]* *[1]University of Turin; [2]University of Delaware*	**Session Keynote** Root phenotyping from lab to the field: challenge for the development of climate-resilient crops *Yusaku Uga; Shota Teramoto* *NARO*
11:30	Interpreting source/sink limitations to growth through high frequency field root obsevations *Richard Nair[1]; Marion Schrumpf[2]; Martin Strube[2]; Mirco Migliavacca[3]* *[1]Trinity College, University of Dublin; [2]Max Planck Institut for Biogeochemistry Jena; [3]JRC, European Commission*	The economic trade-off between root hairs and mycorrhizal partners - from individuals to whole plant communities *Elsa Matthus; Joana Bergmann; Karla Barfuss; Tilo Henning* *Leibnitz Centre for Agricultural Landscape Research, ZALF*	Adaptation of arable cropping to reduced tillage in the Maritime North: West of Europe: Do we need to breed different cultivars? *Tracy Valentine ; Kirsty Binnie; James Grieves; Adrian Newton* *The James Hutton Institute*
11:45	Enhanced phosphorus-fertilizer-use efficiency in intercropping is partly driven by belowground facilitation *Ran An [1]; Rui-Peng Yu [1]; Yi Xing[1]; Hans Lambers[2]; Long Li[1]* *[1] China Agricultural University (CAU); [2] The University of Western Australia*	Understanding soil resource acquisition strategies and drought adaptation in temperate landraces and modern cultivars of maize *Andreas J. Wild[1]; Franziska Steiner[2]; Marvin Kiene[1]; Nicolas Tyborski[1]; Shu-Yin Tung[3]; Tina Koehler[1]; Andrea Carminati[4]; Barbara Eder[3]; Jennifer Groth[3]; Wouter K. Vahl[3]; Sebastian Wolfrum[3]; Tillmann Lueders[1]; Christian Laforsch[1]; Carsten W. Mueller[5]; Alix Vidal[6]; Johanna Pausch[1]*	Engineering legume plants for improved water and nutrient acquisition Shaun Curtin *USDA - Agricultural Research Service*

		[1] University of Bayreuth; [2]Technical University of Munich (TUM); [3]Bavarian State Research Center for Agriculture; [4]ETH Zurich; [5]Technische Universitaet Berlin; [6]Wageningen University	
12:00	Expanding insights into belowground competition: applying multi-omics to deep roots *Suzanne Fleishman[1]; David Eissenstat; Melanie Massonnet; Dario Cantu; Terrence Bell; William King; Michela Centinari* *[1]Penn State University*	Optimizing root systems for yield and soil health in perennial grain crops *Molly Hanlon[1]; Matthew Rubin[1]; Allison Miller[2]* *[1]Donald Danforth Plant Science Center; [2] Donald Danforth Plant Science Center, Saint Louis University*	RaspberryPi Dark Chamber (RaPiD-chamber): introducing a live-imaging chamber to track dynamic root growth adaptation in darkness *Katarzyna Retzer*
12:15	Evaluation of root system architecture diversity in field pennycress (*Thlaspi arvense L.*) and genetic dissection using genome-wide association mapping studies *Marcus Griffiths; Alexander E Liu; Vanessica Jawahir; Sumeet Mankar; Tanner Smith; Kong M Wong; Dmitri A Nusinow; Christopher N Topp* *Donald Danforth Plant Science Center*	Insights into orchid mycorrhiza functioning from stable isotope signatures of fungal pelotons *Franziska E. Zahn[1]; Erik Söll[1]; Thomas K. Chapin[2]; Deyi Wang[3]; Sofia I. F. Gomes[4]; Nicole A. Hynson[2]; Johanna Pausch[1]; Gerhard Gebauer[1]* *[1]University of Bayreuth; [2]University of Hawai'i at Mānoa; [3]Naturalis Biodiversity Center, Leiden; [4]Leiden University*	Root-induced pH increase in the rhizosphere utilizes phosphorus from deficient soils: Across-scale evidence from greenhouse to field, and model simulations *Congcong Zheng ; Christian W. Kuppe; Johannes A. Postma* *IBG-2, Forschungszentrum Jülich*
12:30	Lunch Break		
	Hall 1 AB	Hall 1 CD	Hall 2
	Session 2.3_B *Chair: Klaus Schläppi*	**Session 2.4_B** *Chair: Monika Wimmer*	**Session 2.1_B** *Chair: Tim Brodribb*
14:00	**Session Keynote** Maize *(Zea mays L.)* root exudation profiles change in composition and abundances during plant development - a field study *Michael Santangeli[1]; Teresa Steininger-Mairinger[1]; Doris Vetterlein[2]; Stephan Hann[1]; Eva Oburger[1]* *[1]BOKU, University of Natural Resources and Life Sciences Vienna; [2]UFZ - Helmholtz-Zentrum für Umweltforschung*	**Session Keynote** The impact of soil, year and genotypic vigour on the release of allelopathic metabolites by wheat *Pieter-Willem Hendiks[1]; Peter R Ryan[2]; Paul Weston[3]; Emmanuel Delhaize[4]; Saliya Gurusinghe[3]; Leslie Weston[3]; Gregory Rebetzke[2]* *[1]Lincoln University; [2]CSIRO (Commonwealth Scientific and Industrial Research Organisation) ; [3]Charles Sturt University; [4]The Australian National University*	**Session Keynote** Can measuring barley root systems at early growth stages in the lab or field predict mature root growth in the field? *Charlotte White; Pete Berry* *ADAS*
	Foyer		
14:30	**Postersession 2: Topic 1.4 2.1, 2.2, 2.3, 2.4, 2.5, 2.6**		

15:30	Coffee Break		
	Hall 1 AB	Hall 1 CD	Hall 2
	Session 2.3_C *Chair: Steffen Schlüter*	**Session 2.4_C** *Chair: Johanna Pausch*	**Session 2.2_A** *Chair: Tracy Valentine*
16:00	**Session Keynote** Spatio-temporal dynamics of soil foraging by roots, using stable isotopes to link deep root growth to deep resource uptake *Kristian Thorup-Kristensen* *University of Copenhagen, Denmark*	**Session Keynote** Drought stress in maize alters root exudation and soil microbiome composition and root hairs are involved in this response *Roman Paul Hartwig[1]; Michael Santangeli[2]; Henrike Würsig[3]; María Martín Roldán[3]; Bunlong Yim[4]; Eva Lippold[3]; Ariel Tasca[5]; Eva Oburger[2]; Mika Tarkka[3]; Doris Vetterlein[3]; Patrick Bienert[5]; Evgenia Blagodatskaya[3]; Kornelia Smalla[4]; Monika Wimmer[1]* *[1]University of Hohenheim (340e); [2]University of Natural Resources and Life Sciences (BOKU) Vienna; [3]Helmholtz Centre for Environmental Research (UFZ); [4]Julius Kühn-Institut (JKI); [5]Technical University of Munich (TUM)*	**Session Keynote** In search of the optimal root diameter! *Johannes Postma; Christian Kuppe* *Forschungszentrum Juelich GmbH*
16:30	3D root system architecture of woody plant can be assessed using Structure from Motion photogrammetry *Clément Saint Cast[1]; Céline Meredieu[1]; Jean-Pascal Tandonnet[1]; Frédéric Boudon[2]; Raphaël Ségura[1]; Pascal Mora[3]; Frédéric Danjon[1]* *[1]INRAE - Institut national de la recherche agronomique; [2]CIRAD - UMR AGAP; [3]University of Bordeaux Montaigne*	11^{C}-labelling in combination with Positron Emission Tomography (PET) for investigating carbon transport dynamics in complex root systems *Ralf Metzner[1]; Antonia Chlubek[1]; Daniel Pflugfelder[1]; Gregor Huber[1]; Claudia Knief[2]; Sina Schultes[2]; Peng Yu[2]; Robert Koller[1]* *[1]Forschungzentrum Jülich GmbH; [2]Universität Bonn*	A root hydraulic properties database: the link between experimental data and functional-structural models *Juan Baca Cabrera; Jan Vanderborght; Guillaume Lobet[1]* *[1]Forschungszentrum Juelich/IBG-3*
16:45	Root growth in agroforestry systems: Alley cropping of willow with grassland *Wanda Burzik; Lena Voßkuhl; Michel Müller; Rüdiger Graß; Miriam Athmann* *University of Kassel*	Community composition of root-associated oomycete and fungi in the south-western Australian hyper-diverse chronosequence ecosystems *Duccio Migliorini[1]; Felipe Albornoz Ramirez; Treena Burgess; Kosala Ranathunge; Zhao Zhang; Hans Lambers* *[1]University of Western Australia*	*Multi-scale characterization of the root hydraulic architecture: insights from coupled experiments and modeling* *Fabrice Bauget; Yann Boursiac* *INRAE (Institut national de la recherche agronomique)*
17:00	Advantages of a high-frequency soil imagery pipeline for observing root-soil fauna interactions and dynamics *Christophe Jourdan[1]; Nathalie Raymond[2]; Anysia Vicens[2]* *[1]CIRAD; [2]SATT-AxLR*	Fuelling the underground: A matter of perspectives *Imelda Uwase[1]; Carsten Müller[2]; Florian Wichern[3]; Frédéric Rees[4]* *[1]University of Reading;[2] Technische Universität Berlin; [3]Rhine-Waal University of Applied Sciences; [4]French*	Deciphering Maize Root Proliferation Mechanisms in Phosphorus-Rich Patches: Insights into Sucrose Metabolism and Local-P Signal Regulation *Lingyun Cheng[1]; Sun Yan; Zhang Jinting*

		National Institute for Agriculture, Food, and Environment (INRAE)	
17:15	How to Improve the Soybean Root Characteristic in No-Tillage Long-Term Trial Under Sugarcane Residue? *Denizart Bolonhezi[1]; Paulo Sergio Cordeiro[2]; Olavo Betiol[2]; Élcio Ríos Perez Leal[2]; Fábio Fiori Ruiz[2]* *[1]Agronomic Institute of Campinas - IAC; [2]Sao Paulo State University*	Discovering how heat stress and water deficit, alone or in combination reconfigure interactions between plant and microbial communities *Corentin Maslard[1]; Mustapha Arkoun[2]; Christophe Salon[1]; Fanny Leroy[3]; Lun Jing[2]; Jingjing Peng[4]; Marion Prudent[1]* *[1]INRAE; [2]TIMAC AGRO; [3]Normandie Université; [4]China Agricultural University (CAU)*	Unravelling root growth responses to salt stress in barley *Megan Shelden; Chris Brien; Diane Mather* *The University of Adelaide*
17:30-18:30	**Annual General Meeting ISRR**		

Friday, 7 June 2024

Time / Room	Hall 1
09:00	**Plenary Lecture 9** Successful predicting of crop yield changes following field inoculations with arbuscular mycorrhizal fungi *Klaus Schläppi, University of Basel, Switzerland* — *Chair: Tim George*
09:45	**Plenary Lecture 10** The assembly of the root microbiome - mechanisms, challenges, unsolved issues and possible future directions *Michael Bonkowski, University of Cologne, Germany* — *Chair: Tim George*
10:30	Coffee Break
11:00	**Plenary Discussion** *Moderation: Young Scientists (Maxime Phalempin, Hannah Schneider, Eusun Han, Lingyun Chen)* **Panel:** Dundee Root Medal Awardees, Scientific Committee, Plenary speakers Results of the Root Research questionnaire will be presented and used as a base to discuss what the root research community needs to do to find Roots [&Roads] to a sustainable future **Note:** bring your smart phones
12:00	**Closing / Farwell** Poster awards Announcement for ISRR 13th; Rhizosphere 6 Acknowledgments
13:00	Lunch