Tagungsprogramm

Sunday, July 3, 2011
Arrival and Registration
08:30 h  Registration
10:00 h  Opening, Welcome addresses
Introduction into the Symposium Rainer Matyssek
12:00 h  Lunch

Monday, July 4, 2011
08:30 h  Registration
10:00 h  Coffee break
15:00 h  Coffee break
15:45 h  Karin Pritsch, Helmholtz Zentrum München
  “Reactions of mycorrhizosphere components to plant stress”
16:05 h  Ralf Kaldenhoff, Technische Universität Darmstadt
  “Infestation: molecular components of a parasitic plant – host-plant interaction”
16:40 h  Dieter Ernst, Helmholtz Zentrum München
  “Effects of abiotic and biotic stress on gene transcription in European beech (Fagus sylvatica L.) from saplings to mature trees”
17:00 h  Heinz Rennenberg, University of Freiburg
  “Synthesis Session 1 and Discussion”
18:00 h  Dinner

Transport
You travel to Freising by train. For connections and timetable see: www.bahn.de
The International Airport Munich is approx. 10 km away from Freising. Using S-Bahn S1 (direction Freising – please change in Neufahrn), or use bus 635 or taxi.
From Freising railway station to the convention center, you may take a taxi or walk (15 min. uphill)

Contacts
Prof. Dr. Rainer Matyssek
Phone +49.8161.714574
E-Mail matyssek@wzw.tum.de
Karin Beerbaum/Helga Brunner
Phone +49.8161.714575
E-Mail beerbaum@wzw.tum.de, sfb607@wzw.tum.de

Location of the convention center
Highway München-Freising (A9) Exits München-Ost - Freising-Gelt

International Leopoldina Symposium

Growth and Defence in Plants: Resource Allocation at Multiple Scales

July 4 – 6, 2011

German Academy of Sciences Leopoldina
Convention Center
Bildungszentrum Kardinal-Döpfner-Haus,
Freising, Germany
Organisation
Kammer Matyssek, Technische Universität München (Freising)
Ulrich Lütge, Academy Member (Darmstadt)
Heinz Rennenberg, Academy Member (Freiburg)

About the Meeting
The “conflict” of plants in balancing diverse ecophysiological demands will be highlighted, exemplifying trade-offs and cost/benefit relationships between growth and stress defence. Plants need to optimize the associated resource fluxes in response to internal needs and external availabilities. The regulatory mechanisms mark a current frontier in plant science, challenging the comprehension of plant performance at the transition between molecular, ecophysiological and ecosystem-level processes. Integrative process scaling needs to acknowledge inherent resource interchanges with the abiotic and biotic environment, being determinants of the plant’s resource allocation. Are plants caught in a “dilemma” while coping with conflicting resource demands? To which extent may “functional plasticity” allow plants to “escape” or, at least, mitigate such a dilemma? Available evidence and related theories in plant science will be examined for their mechanistic and ecological relevance, while stressing progress cross-linking across plant and ecosystem scales as a pre-requisite of spatio-temporal pattern comprehension. Beyond that scope, a conceptual extension of “system biology” will be explored within ecological contexts. Multi-organismic genotype/species networks in resource flux and information signalling will be elucidated, integrating science theory, experimentation, bio-mathematical concepts and modelling approaches. The envisaged advancement will consolidate the understanding of natural response variability on mechanistic grounds.

Registration
The registration fee is 35,– Euro per day including lunch and coffee breaks, but excluding accommodation (hotels see below).
Please register until May 31, 2011, using the online registration form: tum-leopoldina@wzw.tum.de

Hotels
Please contact the hotels directly in order to make your reservation: www.freising.de

German Academy of Sciences Leopoldina
Convention Center
Bildungszentrum Kardinal-Döpfner-Haus,
Freising, Germany
Organisation
Kammer Matyssek, Technische Universität München (Freising)
Ulrich Lütge, Academy Member (Darmstadt)
Heinz Rennenberg, Academy Member (Freiburg)
Tuesday, July 5, 2011
Session 2
The Processes: Competition versus Facilitation

08:30 h Sebastian Gayler, University of Tübingen
“Carbohydrate allocation to growth-related and defence-related metabolism – a modelling approach at the whole-plant level”

08:50 h James Cahill, University of Alberta, Calgary
“A trait-based approach to understanding competitive interactions”

09:25 h Thorsten Grams, Technische Universität München
“A space-related perspective on plant-plant interactions”

09:45 h Coffee break

10:30 h Hans Schneider, Technische Universität München
“Stress effects on carbon allocation in a perennial grass – the role of stores in supplying substrate for growth and respiration”

10:50 h Ragan M. Callaway, University of Montana, Missoula
“Positive interactions and interdependence in plant communities”

11:25 h Hans Pretzsch, Technische Universität München
“Facilitation and competition in mixed-species forests analysed along an ecological gradient”

11:45 h Rainer Matyssek, Technische Universität München
“Synthesis Session 2 and Discussion”

12:30 h Lunch

16:00 h Thomas Rötzsch, Technische Universität München
“Mixing patterns of tree species and their effect on resource allocation in forest stands”

16:20 h Ulrich Schurr; IGG Forstforschungszentrum Jülich
“Cost/Benefit relations in root growth and resource acquisition in heterogeneous soils”

16:55 h Axel Göttlein, Technische Universität München
“Tree-internal nutrient distribution – variations in space and time”

17:15 h Eckart Priesach, Helmholtz Zentrum München
“Synthesis Session 3 and Discussion”

18:00 h Dinner

19:00 h Dinner

20:00 h Martin M. Caldwell, Utah State University, Logan
“Analysis of disturbance and forest recovery processes in heterogeneous landscapes”

20:00 h Thomas Rötzer, Technische Universität München
“Towards a functional understanding of plant growth and metabolism”

Wednesday, July 6, 2011
Session 4
The Systems: Holobions and Hiarchy Theory

08:30 h Christian Körner, University of Basel
“Towards a functional understanding of plant growth”

09:05 h Wolfgang Grau zu Castell-Rüdenhausen, Helmholtz Zentrum München
“Complex plant systems: challenges and risks for experimental data analysis”

09:25 h Bernard Saugier, Université Paris-Sud
“A comparison of production processes in crops and forests”

10:00 h Coffee break

10:30 h Kay Hamacher, Technische Universität Darmstadt
“Information Theoretical Hierarchy in the Holobiont”

11:05 h Fabia Rubido Scarano, Federal University of Rio de Janeiro
“From plant to planet: integrating hierarchies to help solve planetary crisis”

11:40 h Rainer Matyssek & Ulrich Lüttge
“Gaia: The Planet Holobiont”

12:00 h Ulrich Lüttge, Technische Universität Darmstadt
“Synthesis Session 4 and Discussion”

12:45 h Lunch

14:00 h Optional excursion to the research site Kranzberg Forest and Helmholtz-Zentrum München

16:55 h Axel Göttlein, Technische Universität München
“Tree-internal nutrient distribution – variations in space and time”

17:15 h Eckart Priesach, Helmholtz Zentrum München
“Synthesis Session 3 and Discussion”

18:00 h Dinner

19:00 h Dinner

20:00 h Martin M. Caldwell, Utah State University, Logan
“Analysis of disturbance and forest recovery processes in heterogeneous landscapes”

20:00 h Thomas Rötzer, Technische Universität München
“Towards a functional understanding of plant growth and metabolism”

21.00 h Concert

22.00 h Optional excursion to the research site Kranzberg Forest and Helmholtz-Zentrum München