



**3rd iLEAPS Science Conference  
Garmisch-Partenkirchen, Germany  
18-23 September 2011**

**Early Career Scientist Workshop (ECSW)  
16-17 September 2011**

**Post-Conference Workshop (PCW)  
25-26 September 2011**

## **WELCOME**

The 3rd iLEAPS Science Conference in Garmisch-Partenkirchen addresses land-atmosphere interactions from integrated observational, modelling, and human influence points of view. It will facilitate international scientific collaboration as well as distribution of results to scientists, policy makers, and public audiences.

iLEAPS organises three events: Science Conference, Early-Career Scientist Workshop (ECSW), and Post-Conference Workshop (PCW). The conference will consist of plenary lectures and invited speeches given by prominent scientists in LEAP (Land Ecosystem – Atmosphere Processes) research in wide-perspective oral sessions, poster sessions of interesting and timely topics, and an Early-Career Scientist programme. These events provide an exciting platform for presenting and discussing the latest scientific developments in the area of land-atmosphere interactions. It also provides an opportunity for cross-fertilisation among the next generation of Earth System models and innovative observational approaches, crucial for addressing present and future climate and global change challenges.

The themes of the conference, the two workshops, and additional satellite events will include land-ecosystem observation and modelling; innovative methods, ideas and challenges in ecosystem-atmosphere interactions; and human drivers and impacts of ecosystem-atmosphere interactions. We warmly welcome participants and representatives from companies, agencies and institutions to the Conference Exhibition on 1<sup>st</sup> and 2<sup>nd</sup> floor of the Congress Centre, and to join the researchers and early-career scientists in planning for future exciting work within land ecosystem-atmosphere interactions research.

We wish to thank Prof. Hans Peter Schmid and his staff at the Institute for Meteorology and Climate Research, Atmospheric Environmental Research, Karlsruhe Institute of Technology for their major role in organising and supporting the conference. We gratefully thank the sponsors for their support to the iLEAPS events Garmisch-Partenkirchen.

On behalf of iLEAPS, we welcome your participation in these exciting events and future collaboration and cooperation, which is essential for climate and global change research for a sustainable planet Earth!

Markku Kulmala  
Co-chair of iLEAPS

Alex Guenther  
Co-chair of iLEAPS

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## **iLEAPS IPO CONFERENCE TEAM**

Alla Borisova  
Anni Reissell  
Tanja Suni

# Schedule iLEAPS SC 2011 - Science Conference

Garmisch-Partenkirchen Congress Centre

Sunday, 18.09.2011			
16:00	19:00	Registration	
19:00	22:00	Ice-breaker	
Monday, 19.09.2011			
<b>7:00</b>		Registration	
<b>8:00</b>	<b>8:30</b>	Welcome and Opening (HaPe Schmid, Markku Kulmala, Alex Guenther)	
<b>8:30</b>	<b>10:00</b>	<b>Session 0.1: Opening Keynote Session</b>	
8:30	9:00	0.1.0	<i>Policy and research - International cooperation</i> Elisabeth Lipiatou (tbc)
9:00	9:30	0.1.1	<i>Land-Atmosphere Interaction in Semi-Arid Regions: Asia Perspective Based on Observation and Modeling</i> Congbin Fu
9:30	10:00	0.1.2	<i>Land-atmosphere interactions and feedbacks research: current knowledge and challenges for the future</i> Almut Arneth
<b>10:00</b>	<b>10:20</b>	<b>Coffee Break + Posters</b>	
<b>10:20</b>	<b>12:00</b>	<b>Session 0.2: Borderless Science (Panel)</b>	
10:20	10:40	<i>iLEAPS and Borderless Science – Introduction to Panel</i> Pavel Kabat	
10:40	12:00	<i>International Panel Discussion</i> (moderated by: Pavel Kabat)	
<b>12:00</b>	<b>13:30</b>	<b>Lunch</b>	
<b>13:30</b>	<b>15:00</b>	<b>Session 1: BGC &amp; Greenhouse gas budgets</b>	
13:30	14:00	1.0	<i>Attribution of climate change to emitting and absorbing regions: Scientific and socio-economic benefits of a global greenhouse gas observing system</i> Philippe Ciais (Keynote)
14:00	14:20	1.1	<i>The land surface at work: Thermodynamics of land surface processes and their interactions with the atmosphere</i> Axel Kleidon (Invited)
14:20	14:40	1.2	<i>Climatic consequences of anthropogenic reactive nitrogen input to terrestrial ecosystems</i> Sönke Zaehle
14:40	15:00	1.3	<i>The turn-of-the-century drought in North America: Widespread reductions in productivity and carbon uptake</i> Christopher Williams
<b>15:00</b>	<b>15:30</b>	<b>Coffee Break + Posters</b>	

<b>15:30</b>	<b>17:00</b>	<b>Session 2: Remote Sensing and Large Scale LEAP</b>	
15:30	15:50	2.1	<i>Novel earth observation products to characterise wetland extent and methane dynamics</i> Garry Hayman (Invited)
15:50	16:10	2.2	<i>The ESA Multi-mission Atmosphere-Land Interaction Study over Boreal Eurasia: ALANIS</i> Diego Fernandez-Prieto
16:10	16:30	2.3	<i>Integrating Earth observation data and a land-surface model to better understand high northern latitude phenology</i> Richard Ellis
16:30	16:50	2.4	<i>Impacts of vegetation on tropical precipitation: evidence from satellite observations</i> Dominick Spracklen
16:50	17:10	2.5	<i>Why are vegetation indices derived from satellite-mounted sensors good predictors?</i> Marta Yebra
<b>17:10</b>	<b>19:00</b>	Posters Theme 1: <b>Observations of LEAP</b>	
<b>Tuesday, 20.09.2011</b>			
<b>8:30</b>	<b>10:00</b>	<b>Session 3: LEAP - Agriculture &amp; Grasslands</b>	
8:30	8:50	3.1	<i>Nitrogen, carbon, and greenhouse gas budgets measured at European grassland sites</i> Christof Ammann
8:50	9:10	3.2	<i>Soil NO<sub>x</sub> emission from pasture and pasture converted to cropping</i> Debra Turner
9:10	9:30	3.3	<i>Atmospheric observations of methane emissions from an agricultural region using aircraft-based systems</i> Raymond Desjardins
9:30	9:50	3.4	<i>Influence of anthropogenic and meteorological drivers on the temporal patterns of ammonia emissions from agriculture in the UK</i> Stefan Reis
<b>9:50</b>	<b>10:20</b>	<b>Coffee Break + Posters</b>	
<b>10:20</b>	<b>12:00</b>	<b>Session 4: Measurement &amp; Data Analysis Methods</b>	
10:20	10:40	4.1	<i>Application of new scintillometry methods in land-atmosphere interaction studies</i> Arnold Moene (Invited)
10:40	11:00	4.2	<i>A new method to obtain minute interval mass fluxes of H<sub>2</sub>O and CO<sub>2</sub> using scintillometry and scalar turbulence measurements</i> Bram Van Kersteren
11:00	11:20	4.3	<i>NO-NO<sub>2</sub>-O<sub>3</sub> trace gas exchange fluxes by plant dynamic chambers: how important is the consideration of analyzers' detection limits and fast gas-phase reactions for the amount and sign of exchange fluxes?</i> Franz X. Meixner
11:20	11:40	4.4	<i>Snowcover effects on surface-atmosphere gas exchange</i> Detlev Helmig
11:40	12:00	4.5	<i>Global carbon-water cycles patterns inferred from FLUXNET observations – useful for model evaluation?</i> Markus Reichstein
<b>12:00</b>	<b>13:30</b>	<b>Lunch</b>	

<b>13:30</b>	<b>14:50</b>	<b>Session 5: Biogenic VOC /Reactive Compounds (I)</b>	
13:30	13:50	5.1	<i>Observations for improving and evaluating isoprene emission models: what do we have and what do we really need?</i> Alex Guenther
13:50	14:10	5.2	<i>Simulation on the contribution of biogenic VOCs to the new particle formation from direct plant chamber measurement</i> Li Liao
14:10	14:30	5.3	<i>Seeking OH reactivity in boreal forest environment</i> Anke Noelscher
14:30	14:50	5.4	<i>Within-canopy sesquiterpene ozonolysis in Amazonia</i> Ana Maria Yanez Serrano
<b>14:50</b>	<b>15:20</b>	<b>Coffee Break + Posters</b>	
<b>15:20</b>	<b>17:10</b>	<b>Session 6: Biogenic VOC /Reactive Compounds (II)</b>	
15:20	15:50	6.1	<i>Measuring the dry depositional sink of oxidized organic vapors to vegetation using PTRMS</i> Thomas Karl
15:50	16:10	6.2	<i>Application of a high resolution PTR-TOF-MS to simulation experiments of beta-pinene oxidation</i> Bettina Steitz
16:10	16:30	6.3	<i>Biogenic volatile organic compound emissions from a temperate forest in Changbai Moutain</i> Jianhui Bai
16:30	16:50	6.4	<i>Concentration of low weight aliphatic amines in boreal forest and urban air</i> Antti-Jussi Kieloaho
16:50	17:10	6.5	<i>Temporal and spatial variability of scots pine terpene emissions in a boreal forest stand</i> Jaana Back
<b>17:10</b>	<b>19:00</b>	<b>Posters Theme 2: Modelling of LEAP</b>	
<b>Wednesday, 21.09.2011</b>			
<b>8:30</b>	<b>9:50</b>	<b>Session 7: LEAP - Forests</b>	
8:30	8:50	7.1	<i>Improving canopy processes in the community land model using FLUXNET data: assessing nitrogen limitation and canopy optimization</i> Gordon Bonan
8:50	9:10	7.2	<i>Representing the radiation balance of canopy gaps within sparse deciduous forests in a land surface model</i> Rachael Turton
9:10	9:30	7.3	<i>An in-depth look into a tropical lowland forest soil: How 9-11 years experimental nitrogen addition affected CH<sub>4</sub> and N<sub>2</sub>O dynamics down to 2-m depth</i> Birgit Koehler
9:30	9:50	7.4	<i>A multi-decadal perspective on the ecosystem carbon budget in a U.S. eastern deciduous forest: results from the Harvard Forest</i> William Munger
<b>9:50</b>	<b>10:20</b>	<b>Coffee Break + Posters</b>	
<b>10:20</b>	<b>12:00</b>	<b>Session 8: LEAP - Wetlands &amp; Water Relations</b>	

10:20	10:40	8.1	<i>The WATCH project - Current knowledge of the terrestrial Global Water Cycle</i> Richard Harding
10:40	11:00	8.2	<i>Tracing water pathways from the land surface through the atmosphere: a new RCM-based evapotranspiration tagging method</i> Harald Kunstmann
11:00	11:20	8.3	<i>How well can we model wetlands in tropical and boreal regions?</i> Simon Dadson
11:20	11:40	8.4	<i>Forest adaptations to permanent water stress conditions</i> Dan Yakir
11:40	12:00	8.5	<i>Observational evidence for soil-moisture impact on hot extremes in southeastern Europe</i> Martin Hirschi
<b>12:00</b>	<b>13:30</b>	<b>Lunch</b>	
<b>12:30</b>	<b>18:30</b>	<b>Excursions</b>	
<b>13:30</b>	<b>19:00</b>	<b>Satellite Event: LULCC Kick-Off Meeting</b> (Room: Dreitorspitze, 1 <sup>st</sup> floor)	
<b>19:00</b>	<b>20:00</b>	<b>Bar/Apero (in Foyer)</b>	
<b>20:00</b>	<b>0:00</b>	<b>Banquet</b>	
<b>Thursday, 22.09.2011</b>			
<b>8:30</b>	<b>9:50</b>	<b>Session 9: Aerosol and Cloud/Precipitation Interactions (I)</b>	
8:30	8:50	9.1	<i>Cloud Aerosol Interaction and Precipitation Enhancement Experiment (CAIPEEX) over India: an overview</i> R.S. Maheskumar (Invited)
8:50	9:10	9.2	<i>Long term aerosol composition, physical and optical properties in Amazonia at a pristine site and at a biomass burning impacted area</i> Paulo Artaxo
9:10	9:30	9.3	<i>Background aerosol distribution in Amazon during wet season</i> Kenia Wiedemann
9:30	9:50	9.4	<i>Aerosol, Clouds, Precipitation and Climate (ACPC): science highlights, plans and implementation strategy</i> Daniel Rosenfeld
<b>9:50</b>	<b>10:20</b>	<b>Coffee Break + Posters</b>	
<b>10:20</b>	<b>12:00</b>	<b>Session 10: Aerosol and Cloud/Precipitation Interactions (II)</b>	
10:20	10:40	10.1	<i>Atmosphere-land interactions study on aerosols over the boreal forest (ALANIS-aerosols)</i> Gerrit de Leeuw
10:40	11:00	10.2	<i>New products for a better characterization of smoke plume and gas/aerosol dispersion from Boreal Eurasian forest fires - The ALANIS Smoke Plume project</i> Jérôme Helbert
11:00	11:20	10.3	<i>Importance of representations for surface active organic aerosol in global scale predictions of cloud droplet numbers</i> Nonne Prisle
11:20	11:40	10.4	<i>Estimating the radiative impacts of biogenic secondary organic aerosol and their variation with location and climate</i> Catherine Scott

11:40	12:00	10.5	<i>Major outcomes of European integrated project on aerosol cloud climate and air quality interactions (EUCAARI)</i> Markku Kulmala
<b>12:00</b>	<b>13:30</b>	<b>Lunch</b>	
<b>13:30</b>	<b>15:10</b>	<b>Session 11: Scale Integration of LEAP</b>	
13:30	13:50	11.1	<i>Isotopes and COS - old and new tracers of ecosystem-atmosphere exchanges</i> Ulrike Seibt (Invited)
13:50	14:10	11.2	<i>Land-atmosphere feedbacks in a semi-arid environment: what we've learnt from AMMA</i> Christopher Taylor
14:10	14:30	11.3	<i>The LandFlux-EVAL Initiative</i> Sonia Seneviratne
14:30	14:50	11.4	<i>The Savanna Patterns of Energy and Carbon Integrated Across the Landscape campaign</i> Jason Beringer
14:50	15:10	11.5	<i>Later senescence, not earlier green-up, is the main trend in US eastern deciduous forests</i> Danilo Dragoni
<b>15:10</b>	<b>15:40</b>	<b>Coffee Break + Posters</b>	
<b>15:40</b>	<b>17:30</b>	<b>Session 12: Seamless Modelling</b>	
15:40	16:10	12.0	<i>Coupling of vegetation and atmospheric models from intermediate to full complexity Global Climate Models – what are we lacking?</i> Stephen Sitch (Keynote)
16:10	16:30	12.1	<i>How plant dynamics processes affect responses of African vegetation to climate change: An analysis with the dynamic vegetation model SEIB-DGVM</i> Hisashi Sato (Invited)
16:30	16:50	12.2	<i>Feedbacks involved in biogeochemistry-atmospheric chemistry and boundary layer interactions</i> Laurens Ganzeveld
16:50	17:10	12.3	<i>The Hadley Centre Earth System Model for Climate Impacts Studies</i> Jemma Gornall
17:10	17:30	12.4	<i>FACE modelling in Tennessee and North Carolina</i> Anthony Walker
<b>17:30</b>	<b>19:00</b>	Posters Theme 3: <b>LUC &amp; Climate Interactions</b> Posters Theme 4: <b>Innovative Methods</b>	
<b>08:30</b>	<b>17:30</b>	<b>Satellite Event: IMECC Final Assembly</b> (Room: Dreitorspitze –Wetterstein – Waxenstein, 1 <sup>st</sup> floor)	
<b>Friday, 23.09.2011</b>			
<b>8:30</b>	<b>10:00</b>	<b>Session 13: Land-Use Change and Climate Interactions (I)</b>	
8:30	9:00	13.0	<i>Drivers and processes of land use change across temporal and spatial scales</i> Mark Rounsevell (Keynote)
9:00	9:20	13.1	<i>Air pollution and climate – current and future challenges</i> Tong Zhu (Invited)



9:20	9:40	13.2	<i>Determining robust impacts of land-use induced land-cover changes on surface climate over North America and Eurasia; results from the first set of LUCID experiments</i> Nathalie de Noblet-Ducoudré
9:40	10:00	13.3	<i>Biofuel cultivation has a deleterious effect on human health and crop productivity</i> Kirsti Ashworth
<b>10:00</b>	<b>10:30</b>	<b>Coffee Break + Posters</b>	
<b>10:30</b>	<b>12:10</b>	<b>Session 14: Land-Use Change and Climate Interactions (II)</b>	
10:30	10:50	14.1	<i>The importance of vegetation on urban surface-atmosphere exchanges: Evidence from measurements and modelling</i> Sue Grimmond (Invited)
10:50	11:10	14.2	<i>Surface Urban Energy and Water Balance Scheme – SUEWS</i> Leena Järvi
11:10	11:30	14.3	<i>Global land cover change in the last millennium – effects on past and present climate</i> Julia Pongratz (Invited)
11:30	11:50	14.4	<i>Rain Followed the Plow: What is the Potential impact of Land Cover Change on the Precipitative Sources of Earth's Breadbaskets?</i> Justin Bagley
11:50	12:10	14.5	<i>Changing food consumption patterns and the impact on global land use</i> Sanderine Nonhebel
<b>12:10</b>	<b>13:30</b>	<b>Lunch</b>	
<b>13:30</b>	<b>14:40</b>	<b>Session 15: Outlook and Synthesis</b>	
13:30	14:00	15.0	<i>Biosphere-atmosphere interactions: the third generation revisited</i> Joseph A. Berry (Keynote: The Last Word)
14:00	14:30	15.1	<i>Synthesis Discussion</i> (Led by Markku Kulmala, Alex Guenther, HaPe Schmid)
14:30	14:40	15.2	<i>Closing</i> Markku Kulmala, Alex Guenther, HaPe Schmid
<b>14:40</b>	<b>15:30</b>	<b>Coffee + Champagne + Slides + Departure</b>	
<b>08:30</b>	<b>15:30</b>	<b>Satellite Event: IMECC Final Assembly</b> (Room: Dreitorspitze –Wetterstein – Waxenstein, 1 <sup>st</sup> floor)	

## LOGISTICS



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**The conference** will be held at the Congress Center Garmisch-Partenkirchen, 5-10 min walk from the Main Train Station.

### **Congress Center Garmisch-Partenkirchen**

Richard-Strauss-Platz 1a

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<http://www.gapa.de/kongresszentrum>

**The Early Career Scientist Workshop (ECSW)** is organized right before the iLEAPS Science Conference, Friday-Saturday 16-17 September 2011 at the Mercure Hotel Garmisch-Partenkirchen, in the hotel's room "Zugspitze-Alpspitze".

### **Mercure Hotel Garmisch-Partenkirchen**

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**The Post-Conference Workshop (PCW)** will be held on 25-26 September 2011 at the KIT - Karlsruhe Institute of Technology's Alpine Campus in Garmisch-Partenkirchen (KIT/IMK-IFU, [www.imk-ifu.kit.edu](http://www.imk-ifu.kit.edu)). This event is by invitation only. For more information, please contact [HaPe.Schmid@kit.edu](mailto:HaPe.Schmid@kit.edu)

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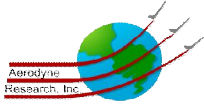
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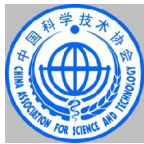
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