

Venue

Hotel Der Blaue Reiter
Amalienbadstrasse 16
76227 Karlsruhe
Germany
www.hotelderblauereiter.de/en/

Registration Fees

incl. proceedings, coffee breaks, and lunches

Regular 180 Euros
Students 100 Euros
Dinner 50 Euros

Conference Website

www.sueddeutsches-klimabuero.de/cac/

Local Organizing Committee



South German Climate Office

Dr. Hans Schipper / Dr. Christina Endler
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(part of KIT Center "Climate and Environment")

Institute of Functional Interfaces

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Welcome and Invitation

We kindly invite you to participate to the conference and workshops "Climate and Constructions". Climate impacts the construction sector in various ways. In this context, the construction sector includes not only construction chemistry, materials technology and building science, but also planning, construction techniques and urban climate.

The challenge is to identify which component is most vulnerable to changes in climate and how to respond to these changes. Many challenging questions are raised by scientists, policy makers, industry etc. For example, what do we know about climate change and its impacts on the construction sector? Which technologies are needed to respond to future climate conditions without neglecting ecological, social, and economical aspects? The conference establishes a platform to discuss scientific results in combination with practical examples, and therefore, contributes to an increased understanding of the two-way interaction between climate change and the construction sector.

The Karlsruhe Institute of Technology (KIT) is one of the leading research institutions in the technological sector. Its main focal points are research, teaching, and innovation. KIT is part of the Helmholtz Association and bundles its environmental research in the KIT Center "Climate and Environment", which supports the dialog at the conference.

Prof. Andreas Wagner

Prof. Dr. Christoph Kottmeier

Workshops

To encourage the dialog between climate research and the construction sector the conference offers workshops in which the role of the current and future climate is discussed.

Four key words are highlighted to define sustainable building management in the context of climate change. These are the subject of the following four workshops:

Technology

- To what extent can materials already cope with the present-day climate?
- Which technologies are particularly climate-sensitive?

Ecology

- What is the role of natural landscape units in the city and are these replaceable by sustainable buildings?
- What is the role of ecological activities in the context of sustainable building?

Economy

- What are the impacts on the economy in the long term of an ecological response to climate change?
- When is adaption more beneficial than mitigation?

Society

- To what extent is society willing to support sustainable building?
- What is the scope of action of society in the case of sustainable building?

Program Climate and Constructions

Conference and Workshops
24 and 25 October 2011
Hotel Der Blaue Reiter, Karlsruhe, Germany

COMPETENCE AREA
"EARTH AND ENVIRONMENT"



Monday 24 October 2011

- 10:30 Welcome**
Dr. Peter Fritz (chair KIT)
Klaus Stapf (mayor)
- 10:45 Climate and Constructions - an introduction** - Prof. Andreas Gerdes
- 11:00 Dialog Climate and Constructions**
Prof. Christoph Kottmeier
Prof. Kevin Lomas
Dr. Michael Haist (moderator)
- 12:00 Lunch break**
- 13:30 Climate mitigation and adaptation in the built environment - sticks, carrots or tambourines... Where to from here?** - Dr. Greg Foliente

SESSION 1: BUILDING SCIENCE

- 14:00 Climate change and sustainable development - consequences for risk assessment and economic valuation of buildings** - Prof. Thomas Lützkendorf
- 14:30 Extension of the heat health warning system by the indoor heat prediction** - Dr. Jens Pfafferoth and Dr. Christina Koppe
- 14:50 Openness to the sky as indicator for daylighting potential and thermal comfort of urban office buildings in mid-latitude and subtropical locations** - Prof. Fazia Ali-Toudert
- 15:10 Poster session + Coffee break**
- 16:40 The climate role in shaping Islamic architectural and urban typologies** - Dr. Hassan Radoine
- 17:00 Static shading design - methodologies and potentials for the optimization of passive climate protection for buildings** - Oliver Hans
- 17:20 Urban strategies and potentials concerning climate change** - Kristin Barbey

SESSION 2: CONSTRUCTION CHEMISTRY

- 14:00 Modern transport infrastructure** - Prof. Markus Stöckner
- 14:30 Computational chemistry - a powerful tool for the design of sustainable construction chemicals** - Julia Süßmuth
- 14:50 Impact of climate change on the performance of building materials laden with salt mixtures** - Dr. Hilde de Clercq
- 15:10 Poster session + Coffee break**
- 16:40 Air hardened foam concrete - a multifunctional future-oriented building material** - Prof. Bernhard Middendorf
- 17:00 Gypsum - the future of a traditional material** - Christian Pritzel and Prof. Reinhard Trettin
- 17:20 Prevention in construction - reduction of greenhouse gases released by an improved durability** - Prof. Andreas Gerdes
- 19:30 CONFERENCE DINNER** - Restaurant Watt's, Ettlingen

Tuesday 25 October 2011

SESSION 3: URBAN CLIMATE

- 08:30 Energetic interactions in the urban boundary layer** - Prof. Wilhelm Kuttler
- 09:10 Radiative and derived thermal properties of urban surface materials using APEX imaging spectroscopy data** - Dr. Christian Feigenwinter
- 09:35 Study on reduction of urban heat island with sea breeze - visualization of the inland penetrating of the sea breeze front** - Dr. Hiroshi Miyazaki
- 10:00 Coffee break**

- 10:40 Hail hazard assessment in Germany** - Marc Puskeiler
- 11:00 Subsurface urban heat island in Oberhausen, Germany and its implications for the urban climate in the context of climate change** - Helene Püllen
- 11:20 Adapting cities to climate induced risks** - Prof. Sofia Thorsson
- 11:50 Lunch break**
- 13:00 Assessments of the outdoor thermal conditions in Szeged, Hungary: thermal sensation ranges for local residents** - Dr. Agnes Gulyas
- 13:20 Calibration of the thermal comfort index physiological equivalent temperature (PET) for open spaces in the city of Belo Horizonte - Brazil** - Simone Hirashima
- 13:40 Introduction to the workshops**

SESSION 4: MATERIALS TECHNOLOGY AND CONSTRUCTION TECHNIQUES

- 08:30 Life cycle management of building structures as a tool for mitigation and climate change adaptation** - Prof. Harald S. Müller
- 09:00 Replacement of cement clinker by limestone powders improving the sustainability of concrete structures** - Dr. Michael Haist
- 09:20 Impact of cool materials in urban heat island** - Prof. Aldo Fanchiotti
- 09:40 A study on the thermal performance and construction method of the traditional wooden house with roof tiles - learning from the Nakamura House as cool roof technique in Okinawa, Japan** - Dr. Hikaru Kinoshita
- 10:00 Coffee break**

- 10:40 Sustainable construction in the Middle East - case study: United Arab Emirates** - Traudel Schwarze-Funke
- 11:00 Vulnerability of constructions in the context of climate change by the example of pavement structures** - Dr. Carsten Karcher
- 11:30 Alternative base and binder courses for urban roads with application of recyclable materials** - Dr. Petr Mondschein
- 11:50 Lunch break**
- 13:00 Performance characteristics of warm asphalt mixes and binders** - Dr. Jan Valentin
- 13:20 Study of the reinforcement role of the fiber glass grid on the fatigue behavior of an asphalt mix** - Prof. Cyrille Chazallon
- 13:40 Introduction to the workshops**
- 13:50 Coffee break**
- 14:10 Workshops**
- 16:15 Discussion of the workshops' results**
- 17:15 Closing**
- 17:30 End**

