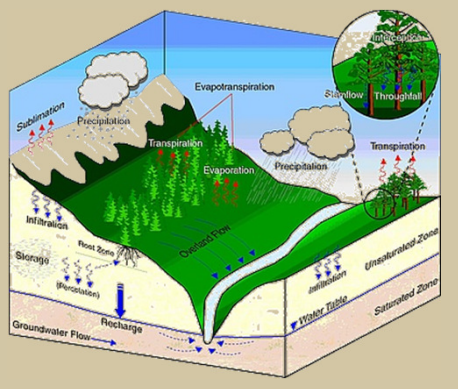
International Conference On Integrated Hydrosystem Modelling

7-10 April 2015, University of Tübingen, Germany



It is now well accepted that water-resources protection requires considering the coupled terrestrial hydrosystem at catchment scale, including atmospheric and land-surface processes, surface-water bodies, and processes in the unsaturated soil zone and in groundwater. The related process descriptions are uncertain; they are affected by heterogeneity, and undergo change.

Sustainable management of water resources under climate and land-use change requires predictive models simulating all relevant hydrological and (biogeo)chemical processes as coupled systems, explicitly accounting for feedback mechanisms. Such physics-based coupled modelling platforms have now reached a state in which they start to get applied in quantitative water resources management. Extensions to water quality, however, are still in their infancy and face particular challenges on the conceptual level and in upscaling to the catchment scale.

The Universities of Tübingen, Hohenheim and Waterloo (Canada) started an International Research Training Group on this topic in the year 2012, funded by the DFG. With the first generation of doctoral candidates approaching their degrees, we have invited internationally renowned specialists in various aspects of integrated hydrosystem modelling to give their broader perspectives on recent issues in modelling coupled systems. The intention is to discuss the state-of-knowledge and to give directions and incentives for future research in modelling coupled terrestrial hydrosystem at catchment scale, including atmospheric and land-surface processes, surface-water bodies, and processes in the unsaturated soil zone and in groundwater.

Programme

Tuesday, 7 April 2015

Welcome and Introduction

13:30 **Welcome & Introducing Remarks**
Olaf Cirpka, University of Tübingen, Germany

14:00 **Catchment as reactors**
Peter Grathwohl, University of Tübingen, Germany

Integrated Modelling Philosophies

14:30 **Integrated Hydrosystem Modelling: Perspectives, applications and future directions**
Edward Sudicky, University of Waterloo, Canada

Coffee Break

16:00 **On how catchments store and release water and solute**
Andrea Rinaldo, EPFL Lausanne, Switzerland

17:00 **From observations to transferable models**
András Bárdossy, University of Stuttgart, Germany

Icebreaker

Programme

Wednesday, 8 April 2015

Reactive Transport & Biogeochemistry across Scales

09:00 **Modeling the land to ocean carbon cascade: from catchment to the globe**
Pierre Regnier, Free University Brussels, Belgium

Coffee Break

10:30 **Waterborne transport and transformation pathways under climate variability and change**
Georgia Destouni, University of Stockholm, Sweden

11:30 **Towards process-based quantification of arsenic mobilisation, fate and transport**
Henning Prommer, CSIRO Perth, Australia

Lunch Break

13:30 **Poster Session I**

Coffee Break

16:00 **Bioenergetic constraints on subsurface microbial activity**
Philippe van Capellen, University of Waterloo, Canada

17:00 **Reactive transport modelling for the design and evaluation of passive groundwater remediation systems**
David Blowes, University of Waterloo, Canada

Guided Tour: Palaeontological Museum

Thursday, 9 April 2015

Geology-Hydrology Interactions & Modelling of Land-Surface Processes

09:00 **Popper, Bayes and the role of prior geological uncertainty in subsurface forecasting**
Jef Caers, Stanford University, USA

Coffee Break

10:30 **Geochemical heterogeneity in sedimentary aquifers**
Richelle Allen-King, University of Buffalo, USA

11:30 **Ecohydrologic role of solar radiation on landscape evolution**
Erkan Istanbulluoglu, University of Washington, USA

Lunch Break

13:30 **Poster Session II**

Coffee Break

16:00 **Optimality theories and multi-scale modeling of ecosystem structure and function**
Gabriel Katul, Duke University, USA

17:00 **Heterogeneous land surface processes and their parameterization in atmospheric and hydrological models**
Yaping Shao, University of Cologne, Germany

Swabian Dinner Buffet

Programme

Friday, 10 April 2015

Uncertainty Quantification

08:30 **The iterative research cycle: Epistemic errors and inference of CPU-intensive system models**
Jasper Vrugt, University of California, Irvine, USA

09:30 **Multi-model approaches to quantify conceptual uncertainty in environmental modelling**
Anneli Schöniger, University of Tübingen, Germany

Coffee Break

Grand Closure

11:00 **Quantifying model uncertainty - or how to stay honest**
Wolfgang Kinzelbach, ETH Zurich, Switzerland

12:00 **Closing Remarks & Good Bye**
Olaf Cirpka, University of Tübingen, Germany

Registration

Please register online at:
www.geo.uni-tuebingen.de/irtg2015conference

Registration Fee: 150 EURO
The registration fee includes catering on all days between sessions and lunch, as well as drinks and snacks at the Icebreaker on Tuesday and the Conference Dinner on Thursday

Registration becomes definitive only when payment has been received on:
Account Holder: University of Tübingen
Bank Name: Kreissparkasse Tübingen
Swift (BIC): SOLADES1TUB
IBAN: DE13 6415 0020 0000 0130 04
Purpose of Transfer:
Projekt 3034020301 / IRTG Conference [your name]

Participants will receive a confirmation upon payment.

Contact

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Travel

Tübingen can be reached

by railway: From Stuttgart Central Station it takes just 55 minutes to the centre of Tübingen.

by plane: From Stuttgart Airport by car via B27 in 25 minutes to the centre of Tübingen, or by airport shuttle "Airport Sprinter" No. 828, in 50 minutes to Tübingen's bus terminal (approx. every 30 min. from the bus stop in front of Terminal 1 (arrival level).

by car: From the autobahn A8 (München-Stuttgart) via B27 in 30 minutes; from autobahn A81 (Singen-Heilbronn) via B28 in 25 minutes.

Location

The conference will be held at the Department of Geosciences, in the centre of Tübingen.

Department of Geosciences
Lecture Hall HS 320
Hölderlinstr. 12, 72074 Tübingen, Germany

Accomodation

Please contact the Tourist Information Tübingen, +49 7071 9136-0, mail@tuebingen-info.de
or check their Online Portal for Accomodation at:
http://tuebingen-info.de/index.php?id=768

EBERHARD KARLS UNIVERSITÄT TÜBINGEN
FACULTY OF SCIENCE
Center for Applied Geoscience
International Research Training Group "Integrated Hydrosystem Modelling"