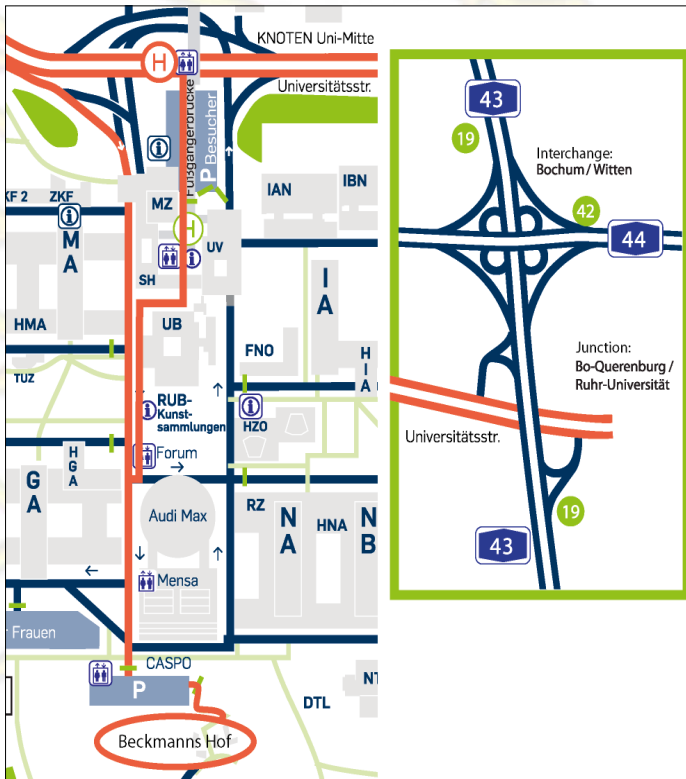


LOCATION



RUHR
UNIVERSITY
BOCHUM

RUB

IBZ - Beckmanns Hof
Ruhr University Bochum
Universitätsstraße 150
44801 Bochum

RUHR UNIVERSITY BOCHUM

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IKC – CCE – SFB 837
- JOINT WORKSHOP -

ADVANCES IN TUNNELING RESEARCH

16. APRIL 2013



IKC
**INNOVATION AND
KNOWLEDGE CENTRE**
- UNIVERSITY OF CAMBRIDGE -



土木工程學院
COLLEGE OF CIVIL ENGINEERING

CCE
**COLLEGE OF
CIVIL ENGINEERING**
- TONGJI UNIVERSITY -

RUHR UNIVERSITY BOCHUM

SFB 837 - Interaction Modeling in Mechanized Tunneling

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SFB 837
**INTERACTION MODELING IN
MECHANIZED TUNNELING**
- RUHR UNIVERSITY BOCHUM -

www.rub.de/sfb837

DFG Deutsche
Forschungsgemeinschaft

IKC – CCE – SFB 837 JOINT WORKSHOP

16. APRIL 2013 – 10:00 - 18:30

Ruhr University Bochum, IBZ - Beckmanns Hof

The Collaborative Research Centre 'Interaction Modeling in Mechanized Tunneling' (SFB 837) at Ruhr University Bochum, Germany has established cooperation with the 'Innovation and Knowledge Centre' (IKC), University of Cambridge, UK and the College of Civil Engineering of Tongji University, China. This cooperation is manifested, among other joint activities, in organizing annual joint Ph.D. workshops aiming to exchange recent research in the field of Subsurface Modeling and Engineering and Smart Infrastructure.

Research topics cover innovative monitoring methods, experimental methods as well as novel computational models and simulation methods. After two successful bi-lateral workshops held at Cambridge in April 2011 and at Tongji University in July 2012, the Workshop in 2013 is organized as a joint RUB-Cambridge-Tongji event prior to the EURO:TUN 2013 conference.

IKC: Innovation and Knowledge Centre, University of Cambridge, UK

Research at the 'Innovation and Knowledge Centre' (IKC) installed at the Department of Engineering at Cambridge University is focusing on exploiting the potential of novel sensor technologies for the monitoring and life-cycle oriented control of smart infrastructure, including underground structures, throughout the whole lifetime.

<http://www.cam.ac.uk>

CCE: College of Civil Engineering, Tongji University, China

Research at the Department of Geotechnical Engineering (College of Civil Engineering, Tongji University) is focussed on planning, design and construction techniques in modern tunnel and underground engineering including life cycle analysis, risk assessment, structural monitoring and control of underground infrastructure and numerical modeling in subsurface engineering.

<http://civileng.tongji.edu.cn/en/>

SFB 837: Interaction Modeling in Mechanized Tunneling, Ruhr University Bochum, Germany

Main focus of the SFB 837, installed by the German Science Foundation (DFG) at Ruhr University Bochum, is the research and development of numerical models, computational and experimental methods and design concepts, which, when adequately interlinked, consider the manifold complex interactions of the components (ground, shield machine, support measures, tunnel lining, existing buildings) and processes (excavation, installation of support, logistics) involved in mechanized tunneling.

www.rub.de/sfb837

WORKSHOP PROGRAM

Opening – Prof. Günther Meschke

10:10 - 12:30 Session 1 – Chairman: Prof. Yun Bai

Full Scale Test Study on Mechanical Behaviors of Shield Tunnel Segments at Ultimate Loading

Min Tang – CCE, Tongji University

The Effects of Tunnelling on Bored Piles

Michael Williamson – IKC, University of Cambridge

Development of Effective Concepts for Tunnel Reconnaissance using Acoustic Methods

Khayal Musayev – SFB 837, Ruhr University Bochum

Post Office Railway - Tunnel Monitoring and Assessment

Matthew Wilcock – IKC, University of Cambridge

Study on Inner Force and Displacement Caused by Pit Excavation

Pan Li – CCE, Tongji University

13:45 - 15:45 Session 2 – Chairman: Prof. Kenichi Soga

Experimental Investigation on Static Behavior of Tunnel Lining Strengthened by Textile-Reinforced

Dejun Liu – CCE, Tongji University

Simulation of Productional and Logistical Processes in Mechanized Tunneling

Tobias Rahm – SFB 837, Ruhr University Bochum

Behaviour of Cast-Iron Segmental Tunnel Linings and their Modelling

Zili Li – IKC, University of Cambridge

A 3D FEM for Shield Tunnel Undercrossing the Historical Building in Soft Ground

Yafei Qiao – CCE, Tongji University

16:15 - 18:15 Session 3 – Chairman: Prof. Markus Thewes

Adaptive Constitutive Modeling in Mechanized Tunnel

Excavation Analysis

Kamran Vakili, Nina Müthing, Thomas Barciaga – SFB 837, Ruhr University Bochum

Numerical Analysis and Field Measurement of Cross-Passage Junction

Masanari Nakashima – IKC, University of Cambridge

A 3D Probability Healing Model for Microcapsule Self-Healing Method

Shuai Zhou – CCE, Tongji University

Scenario-Based System Identification and Model Selection in Mechanized Tunneling Considering Uncertainties

Shorash Miro – SFB 837, Ruhr University Bochum

Closing

18:30 Diner