SFB 837

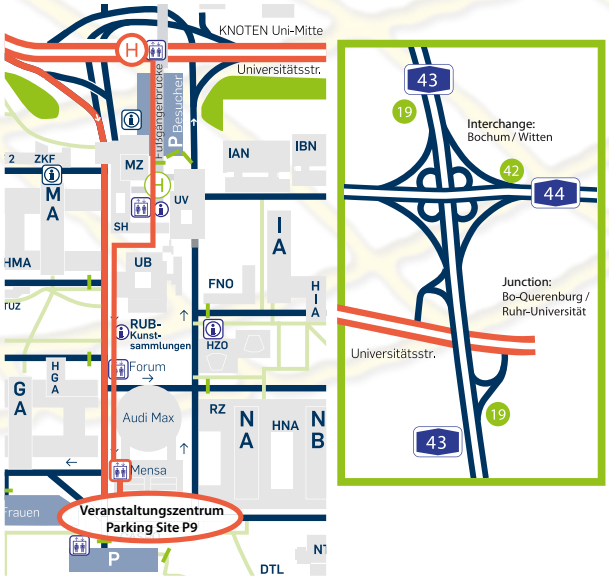
CONTACT

Sven Plückelmann, M.Sc.

Ruhr-Universität Bochum, Building Materials
Universitätsstraße 150, 44801 Bochum

Phone: +49 234 32 21406
E-Mail: Sven.Plueckelmann@rub.de
Website: www.rub.de/baustoffe

LOCATION



Veranstaltungszentrum, Room 1
Ruhr-Universität Bochum
Universitätsstraße 150,
44801 Bochum, Germany

Detailed traveling information:
www.rub.de/anreise/index_en.html

SFB COORDINATOR

Prof. Dr. Günther Meschke

PROJECT LEADERS

Civil and Environmental Engineering, RUB
Dr.-Ing. W. Baille *(Foundation Engineering, Soil & Rock Mechanics)*
Prof. Dr. D. Balzani *(Continuum Mechanics)*
Prof. Dr. R. Breitenbücher* *(Building Materials)*
Dr.-Ing. S. Freitag *(Structural Mechanics)*
Prof. Dr. K. Hackl *(Mechanics of Materials)*
Prof. Dr. M. König* *(Computing in Engineering)*
Dr. A. A. Lavasan *(Foundation Engineering, Soil & Rock Mechanics)*
Dr.-Ing. E. Mahmoudi *(Foundation Engineering, Soil & Rock Mechanics)*
Prof. Dr. P. Mark *(Concrete Structures)*
Prof. Dr. G. Meschke* *(Structural Mechanics)*
Prof. Dr. T. Nestorović *(Mechanics of Adaptive Systems)*
Dr.-Ing. B. Schößer *(Tunneling and Construction Management)*
Prof. Dr. M. Thewes* *(Tunneling and Construction Management)*
Dr.-Ing. J. J. Timothy *(Structural Mechanics)*
Prof. Dr. A. Vogel *(High Performance Computing)*

Mechanical Engineering, RUB
Dr.-Ing. A. Röttger *(Materials Technology)*

Geosciences, RUB
Prof. Dr. W. Friederich *(Geophysics)*
Prof. Dr. J. Renner *(Experimental Geophysics)*

* Members of the Executive Board

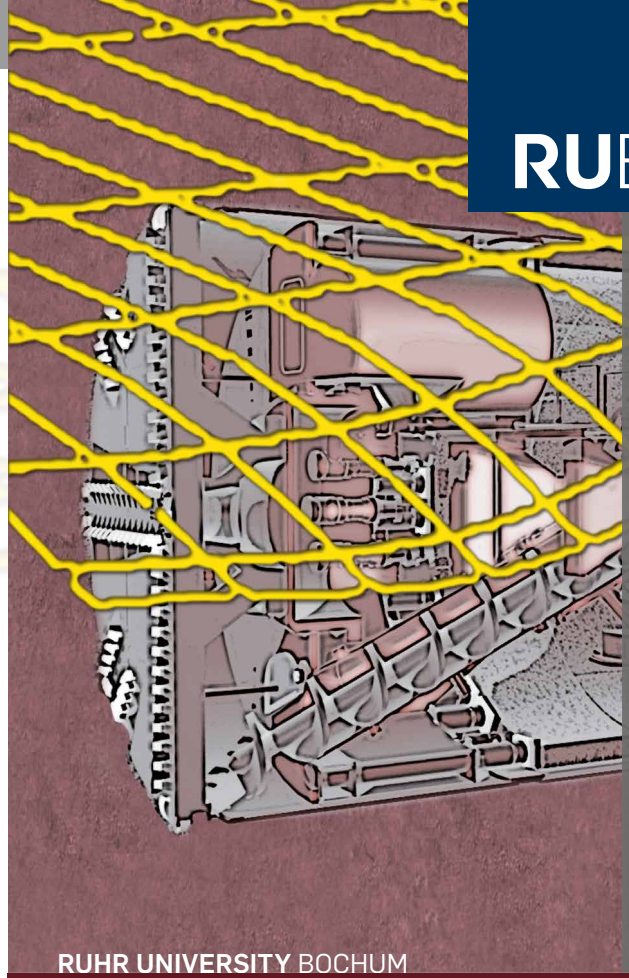
RUHR UNIVERSITY BOCHUM

SFB 837 - Interaction Modeling in Mechanized Tunneling

CEO: Dipl.-Ing. Jörg Sahlmen

Building IC/6/89
Universitätsstraße 150
D-44801 Bochum

Fon: +49 (0)234 32-24759
Fax: +49 (0)234 32-14696
Mail: sfb837-gs@rub.de



RUB

WWW.RUB.DE/SFB837

RUHR UNIVERSITY BOCHUM

COLLABORATIVE RESEARCH CENTER 837
– WORKSHOP –

HYBRID LINING SEGMENTS FOR MODERN TUNNEL CONSTRUCTIONS

SEPTEMBER 18TH, 2018

INTERACTION MODELING MECHANIZED TUNNELING

DFG Deutsche Forschungsgemeinschaft

SFB 837 – PROJECT OBJECTIVES

Mechanized tunneling is an established flexible and efficient technology for the construction of underground infrastructure, characterized by a dynamic advancement of tunnel boring technologies, increasing diameters and a broadening range of applicability. This rapid development in association with the inherent heterogeneity of the ground poses new challenges to prognosis models.

Considering this background, the subject of the Collaborative Research Center SFB 837 "Interaction Models for Mechanized Tunneling" is the research and development of models, methods and design concepts, which, when adequately interlinked, can deal with the manifold complex interactions of the components and processes involved in mechanized tunneling.

Research within the four project areas of the SFB includes the ground exploration and modeling of the ground, the tunnel boring machine, the lining and annular gap grouting, and the interactions between tunneling and existing structures. Furthermore, the cutting, advancement and logistics processes are represented using adequate models integrated by means of a consistent SFB-wide tunnel information system.

HYBRID LINING SEGMENTS FOR MODERN TUNNEL CONSTRUCTIONS –

Intelligent use of steel fiber reinforcement

Participation is free. Please register online:
www.rub.de/sfb837

HYBRID LINING SEGMENTS FOR MODERN TUNNEL CONSTRUCTIONS –

Intelligent use of steel fiber reinforcement

The application of steel fiber reinforced concrete for precast tunnel lining segments is increasingly gaining importance for several years. This workshop mainly aims to present and discuss recent advances and developments both within and outside the SFB 837. Furthermore its objective is to give an overview on practical experiences regarding the use of steel fiber reinforced concrete for segmental linings. In particular aspects of material, production, robustness, durability and sustainability are in the focus of the workshop.

WORKSHOP – SEPTEMBER 18TH, 2018

Veranstaltungszentrum, Room 1 – 9:00 - 18:00

09:30 **Fiber reinforced concrete: Applications and recent trends in tunneling**
Martin Eberli
Bekaert Maccaferri Underground Solutions BVBA

10:00 **Practical design of segmental lining with steel fiber reinforcement**
Benno Ring
Ring – Consultancy in Tunneling

10:30 Coffee Break

11:00 **Steel fiber reinforced concrete for tunnel segments – durability aspects, design considerations and case studies**
Carola Edvardsen
COWI

HYBRID LINING SEGMENTS FOR MODERN TUNNEL CONSTRUCTIONS –

Intelligent use of steel fiber reinforcement

WORKSHOP – SEPTEMBER 18TH, 2018

Veranstaltungszentrum, Room 1 – 9:00 - 18:00

11:30 **Twenty years of research on FRC segmental lining**
Prof. Giovanni A. Plizzari
University of Brescia

12:30 Lunch

13:30 **Tests on precast tunnel segments in concrete with newly high tensile strength steel fibers**
Benoit de Rivaz
Bekaert Maccaferri Underground Solutions BVBA

14:00 **Production methods and experimental investigations on hybrid lining segments**
Sven Plückelmann
Ruhr University Bochum

14:30 Coffee Break

15:00 **Robust design of hybrid SFRC lining segments**
Vojtech Ernst Gall
Ruhr University Bochum

15:30 **Optimization based reinforcement layout for concrete elements under partial-area loading**
Mario Smarslik
Ruhr University Bochum

16:30 Social program