

SONDERFORSCHUNGSBEREICH 837

# INTERAKTIONSMODELLE MASCHINELLER TUNNELBAU

RUB

SUMMER SCHOOL:

## SFB 837 – GRK 2075



20. - 22. SEPTEMBER 2021 RUB – Hörsaal H9 - Hochschule Bochum  
Am Hochschulcampus 1 – 44801 Bochum

### SUMMER SCHOOL PROGRAM

20. SEPTEMBER 2021 – 12:00 - 20:00

12:00 Lunch

13:00 **Welcome**

Prof. Günther Meschke,  
(Ruhr University Bochum)  
Prof. Manfred Krafczyk  
(TU Braunschweig)

13:30 **Aging Effects on Interactions of Embedded  
and Externally Bonded Reinforcement in  
Strengthened Concrete Structures**

Zhuo Chen  
(TU Braunschweig)

14:00 **Swelling Behaviour of Clay Shales in  
Interaction with Deformable Tunnel Lining**

Florian Christ  
(Ruhr University Bochum)

14:30 **Impact of the Size of the Aggregates on  
the Service Life of Loaded Structures  
Exposed to Chlorides**

Stefan Ullmann  
(TU Braunschweig)

15:00 Coffee Break

15:30 **Lab Tour 1:**

**Tribological and Mechanical Properties  
of Wear Resistant Materials**

Lukas Brackmann  
(Ruhr University Bochum)

**Geotechnical Lab**

Dr. Wiebke Baille  
(Ruhr University Bochum)

17:00 **Combination of Eigenerosion with the  
Finite Cell Method for the Numerical  
Analysis of Surface Spalling in Metal  
Matrix Composites**

Dennis Wingender  
(Ruhr University Bochum)

17:30 **Time-Dependent Behaviour of Cracks  
in Reinforced Concrete Members**

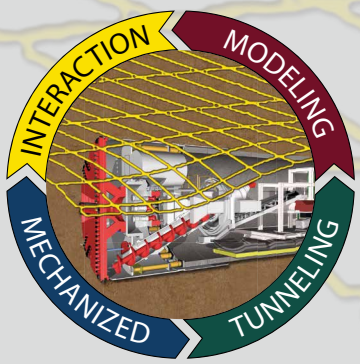
Jonas Cramer  
(TU Braunschweig)

18:00 **Modeling of Damage in EDZ Caused  
by Mechanized Tunneling**

Maximilian Schoen  
(Ruhr University Bochum)

19:00 Dinner Q-West

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21. SEPTEMBER 2021 – 09:00 - 20:30

09:00 **Inverse Analysis and Monitoring-Based Structural Stress Prediction of a Beam Structure using Artificial Neural Networks**

Nicola Gottardi  
(Ruhr University Bochum)

09:30 **Bayesian Identification of Mechanical Parameters in a Reinforced Concrete Damage Model**

Simona Dobrilla  
(TU Braunschweig)

10:00 Coffee Break

10:30 **Lab Tour 2:  
Bentonite Lab**

Dr. Britta Schöber, Sebastian Kube  
(Ruhr University Bochum)

**Structural Engineering Lab**

Diego Petraroia  
(Ruhr University Bochum)

12:00 Lunch

13:00 **Evaluation of Shear Capacity of Reinforced Concrete Bridges**

Johannes Rathgen  
(TU Braunschweig)

13:30 **Parallel Finite Cell Method with Adaptive Geometric Multigrid**

Poria Saberi  
(Ruhr University Bochum)

14:00 **Ageing of Wood as a Construction Material**

Juan Li  
(TU Braunschweig)

14:30 **An Approach for Cross-Data Querying and Spatial Reasoning of Tunnel Alignments**

Marcel Stepien  
(Ruhr University Bochum)

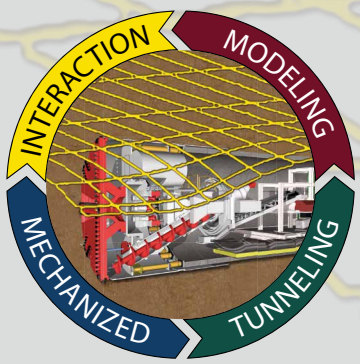
15:00 Departure to Social Event

16:00 Museum Henrichshütte in Hattingen

18:00 Dinner Henrichshütte in Hattingen

20:30 Departure to IBIS Hotel,  
City Center Bochum and RUB





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### SUMMER SCHOOL PROGRAM

22. SEPTEMBER 2021 – 09:00 - 12:30

09:00	<b>Deformation Measurement and Crack Detection Using ESPI</b> Marcel Grabowski (TU Braunschweig)	10:30	Coffee Break
09:30	<b>Thermo-Hydro-Mechanical Isogeometric Analysis of Artificial Ground Freezing</b> Rodolfo Williams (Ruhr University Bochum)	11:00	<b>Feature Extraction from Cutting Discs – Why there is no better Expression for this</b> Sebastian Priebe (Ruhr University Bochum)
10:00	<b>Welding Under Service Conditions in Compliance with Standard Requirements for Weld Seam Quality and Fatigue Resistance &amp; Fatigue Behaviour of Threaded Tension Rods</b> Florian Begemann, Hendrik Jahns (TU Braunschweig)	11:30	<b>Condition Monitoring of Vibrating Structures Using Data-Based Modeling</b> Lukas Outzen (TU Braunschweig)
		12:00	Cosing
		12:30	Lunch

### SOFT SKILL TRAINING

Start the Dialogue, Open Up Science!

Introduction to Science Communication and Public Engagement

- get to know national and international developments and best practice examples in science communication and public engagement
  - learn how to plan strategic communication and engagement activities related to their research topic
  - develop skills and discover practical tools for engaging multiple target audiences and stakeholders with research
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|-------|--|
| 13:30 | <b>Communication 1</b><br>Annette Klinkert<br>(city2science) |
| 15:30 | Coffee Break   |
| 16:30 | <b>Communication 2</b><br>Annette Klinkert<br>(city2science) |
| 18:00 | End  |